08-01148-01-200

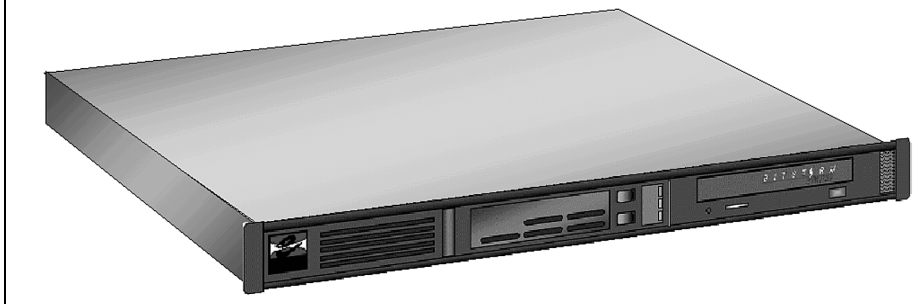
Elastic Networks

StormTracker-Site Manager and Administration

User Guide

Software Release 3.00

Document Revision 2.00 (Pilot Release)
Publication Date: March 2001



BITSTORM
SERVER

Elastic Networks

StormTracker-Site Manager and Administration

User Guide

Software Release 3.00

Document Revision 2.00
Publication Date: March 2001

© 2001 Elastic Networks

All rights reserved

All information contained in this document is subject to change without notice. Elastic Networks reserves the right to make changes to equipment design or program components, as progress in engineering, manufacturing methods, or other circumstances may warrant.

EtherLoop is a trademark of Elastic Networks.

Publication history

Document Release	Date	Description
Document Revision 2.00	March 2001	Document Pilot Release for StormTracker-Site Manager software.
Document Revision 1.00 (Beta)	April 2000	Document Beta Draft to accompany Beta release of Site Manager software.

Contents

About this document **xi**
Audience xi

Introducing the BitStorm™ Server software and system applications **1-1**
BitStorm Server unit and software groups 1-2
BitStorm™ Server unit 1-2
BitStorm Server software groups 1-3
Administration 1-4
BitStorm™ Server system applications 1-5
StormTracker-Site Manager carrier systems 1-5
YesWare-VBN hospitality systems 1-6
BitStorm™ Server EtherLoop system components 1-7
EtherLoop CPE modems 1-7
BitStorm™ 1900 Access Multiplexer Shelf and components 1-9
MicroBurst 4212T mini-IP DSLAM 1-10
BitStorm™ Server system installation process 1-11
Organization of this manual 1-11

StormTracker-Site Manager and Administration software modules **2-1**
Module operation and document conventions 2-2
Module operations/dialogs 2-2
Document conventions 2-2
Home 2-4
Database 2-5
EtherCraft 2-6
Downloader 2-7
SNMP 2-8
Modex Daemon 2-9
StormTracker-Spectrum Manager 2-10
BitStorm Server Administration software module 2-11
Help 2-12

BitStorm Server host network configuration 3-1
BitStorm Server 3-2
BitStorm Server functional components 3-2
Site Manager network and YesWare-VBN interfaces - ETH 0 and ETH 1 3-2
BitStorm Server console connection methods 3-4
BitStorm Server keyboard/monitor connections 3-4
BitStorm Server PC/VT-100 connection 3-5
BitStorm Server telnet connection 3-6
BitStorm Server interface: StormTracker Configuration Manager 3-7
StormTracker Configuration Manager login default 3-7
StormTracker Configuration Manager welcome screen and prompt 3-8
StormTracker Configuration Manager commands 3-9
Configuring the BitStorm Server host network interface 3-10
Setting the BitStorm Server date and time 3-14
Setting the DNS nameserver(s) for the BitStorm Server 3-16

BitStorm™ Server administration 4-1
Using the Administration module 4-2
Administration / System function 4-3
Administration / License function 4-7
Using the BitStorm Server and YesWare modules for the first time 4-8
Setting up system users and passwords 4-11
Verifying the server network connection 4-12

Using the Database Module 5-1
Database module operations 5-2
Provisioning the EtherLoop modem database 5-3
Modex Daemon ETH 0 / ETH 1 interface configuration 5-3
Unmanaged vs. managed modem shelves 5-4
Provisioning EtherLoop modems 5-5
Exporting and importing EtherLoop modem databases 5-8
Using the Database / Export to File function 5-8
Using the Database / Import from File function 5-8

Using EtherCraft **6-1**
EtherCraft OAM&P features 6-2
EtherLoop modem monitoring and performance management 6-2
View Logs 6-3
Privacy Mgmt 6-3
Modem management 6-4
EtherLoop modem speeds and training counts 6-4
Check Speeds 6-7
Modem Details 6-8
Client Addresses 6-12
Status 6-13
Version 6-14
Reset Modems 6-15
Log Management 6-16
Using the Get Logs function 6-16
Using the Clear Logs function 6-17
Privacy Management 6-18
Using the Privacy Mgmt feature 6-18
CO modem port management 6-19
CPE modem port management 6-20

Using the Downloader module **7-1**
Downloader purpose and function 7-2
Using Downloader 7-2
Downloader status and logs 7-2
Upgrading EtherLoop modem firmware 7-3
Upgrading from Generation 1 to Generation 2 modem firmware 7-6

About this document

This document describes the purpose, procedures, and requirements for using the **StormTracker-Site Manager** and **Administration** software groups on the BitStorm Server.

Audience

The audience for this document includes network planners, installation technicians, network administrators, and anyone who may be charged with provisioning or maintaining a BitStorm Server.

Introducing the BitStorm™ Server software and system applications

This chapter introduces BitStorm Server software groups and the system applications for the BitStorm Server. This document covers only the **StormTracker-Site Manager** and **Administration** software groups. Other software residing on the BitStorm Server is covered in separate documentation.

Chapter topic list

This chapter includes the following topics.

Topic	See
BitStorm Server unit and software groups	page 1-2
BitStorm™ Server system applications	page 1-5
BitStorm™ Server EtherLoop system components	page 1-7
BitStorm™ Server system installation process	page 1-11

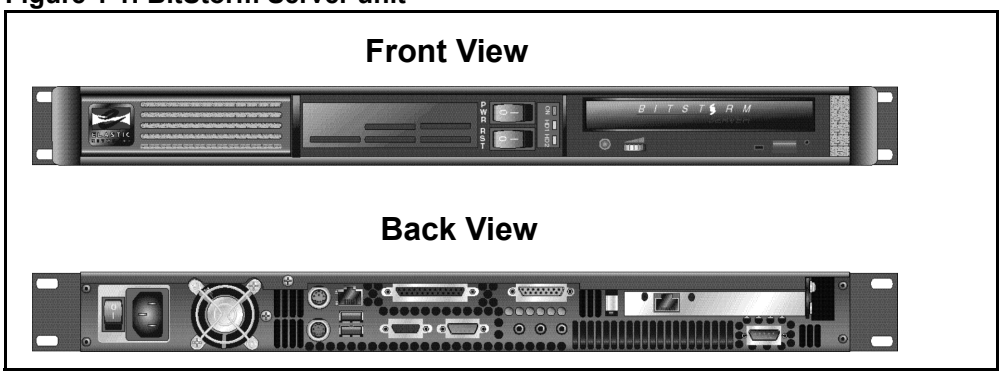
BitStorm Server unit and software groups

The software available on a BitStorm Server depends on the system application. The following sections introduce the BitStorm™ Server, the software groups it supports, and the intended system applications for the BitStorm Server and its software. References to separate documentation are provided where necessary.

BitStorm™ Server unit

The BitStorm™ Server is the hardware platform that supports the tools for provisioning and management used in EtherLoop™ systems and the visitor-based networks of YesWare-VBN. The BitStorm™ Server can be located in the central communications room of the local facility or at a remote network operating center (NOC).

Figure 1-1: BitStorm Server unit



BitStorm Server software groups

At a minimum, a BitStorm Server will contain the **StormTracker-Site Manager** and **Administration** software groups covered by this document. Other software groups supported by the BitStorm Server include **YesWare-VBN** and **StormTracker-Spectrum Manager**. Figure 1-2 shows the BitStorm Server "Home" page with the links to these software groups.

Figure 1-2
BitStorm Server main page

YesWare-VBN

YesWare-VBN is used to manage an EtherLoop or Ethernet Visitor-Based Network (VBN). YesWare software modules support the following VBN system applications:

- seamless Internet or intranet access to "visitor" end-user computers
- host site customization and service branding
- flexible options for visitor authentication and service billing

YesWare-VBN is an optional BitStorm Server component and is purchased separately from the BitStorm Server. The *YesWare Applications User Guide* contains the instructions for using the **YesWare-VBN** software group.

StormTracker-Spectrum Manager

Part of the StormSystem family of intelligent IP solutions, the **StormTracker-Spectrum Manager** software is used to "fine-tune" the performance of EtherLoop modems. The **StormTracker-Spectrum Manager** supports the following major functions:

- adjust EtherLoop modem signal transmission to maximize protection from signal interference caused by other high-speed data services in the same binder group as the EtherLoop lines
- maximize bandwidth available for EtherLoop modem signal transmission in binder groups with no other high-speed data services

The **StormTracker-Spectrum Manager** software is an optional BitStorm Server component and is purchased separately from the BitStorm Server. The *StormTracker-Spectrum Manager User Guide* contains the complete instructions for using the **StormTracker-Spectrum Manager** software.

StormTracker-Site Manager

Part of the StormSystem family of intelligent IP solutions, the **StormTracker-Site Manager** software group is used to build and manage the EtherLoop modem database supported by the BitStorm Server in ***any*** system application. The **StormTracker-Site Manager** supports the following major functions:

- automatically detect and manage all EtherLoop modems on the same LAN segment as the BitStorm Server
- automatically detect and manage EtherLoop modems across TCP/IP LAN or WAN segments through the appropriate EtherLoop digital subscriber line access multiplexer (DSLAM)
- monitor the performance EtherLoop modems
- configure Simple Network Management Protocol (SNMP) support for the modems
- upgrade modem firmware

This document contains the instructions for performing these tasks using the **StormTracker-Site Manager** software group, with the exception of the SNMP functionality. The *StormTracker SNMP User Guide* contains the complete instructions for using the *SNMP* module and functionality.

Administration

The **Administration** software group is used to manage the BitStorm Server and supports the following major functions:

- shutdown and restart the server
- upgrade the server software
- configure the server network connections
- create users and manage user access to the server
- software license management and licensing updates

This document contains the instructions for performing these tasks using the **Administration** software group.

BitStorm™ Server system applications

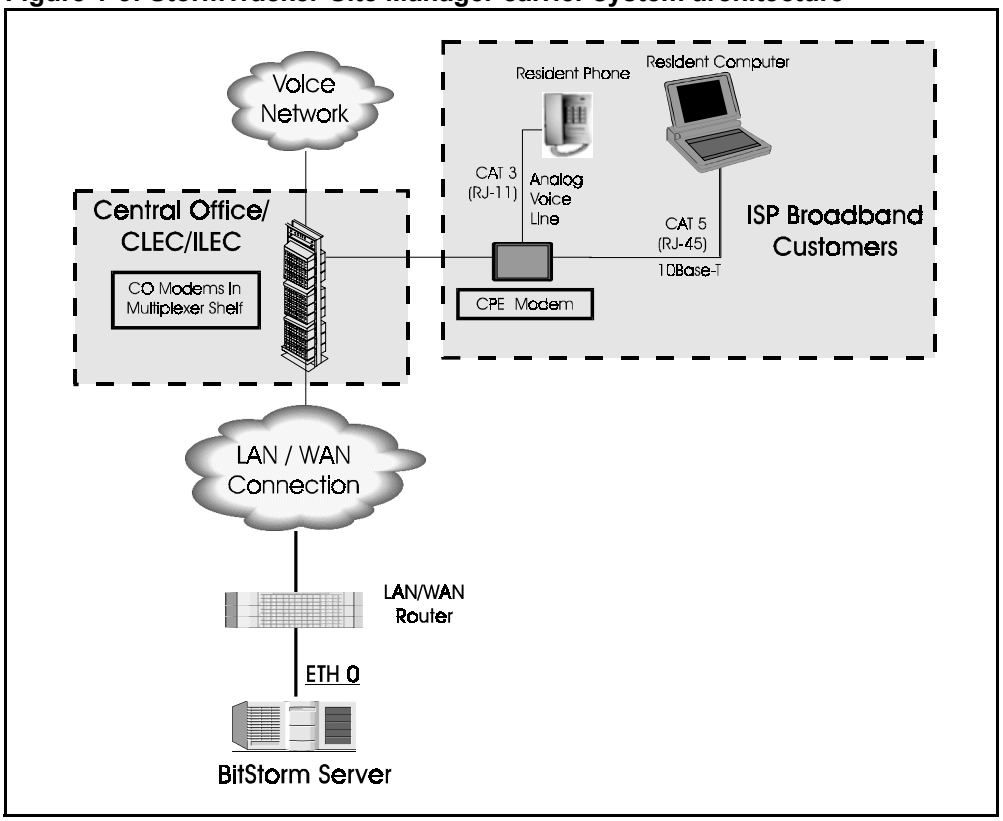
The BitStorm™ Server can be configured to serve two types of systems: **StormTracker-Site Manager** systems and **YesWare-VBN** systems. The following sections describe each of these systems and illustrate the system architectures.

StormTracker-Site Manager carrier systems

StormTracker-Site Manager carrier systems are used for the operations, administration, management and provisioning (OAM&P) of EtherLoop™ systems that provide service in "carrier" environments. StormTracker-Site Manager carrier systems are used by telcos and other Internet Service Providers (ISPs) who provide EtherLoop as a broadband connection for their customers. The only purpose of StormTracker-Site Manager carrier systems is to monitor and optimize the performance of the EtherLoop modems in the system. Customer billing is accomplished separately from the BitStorm Server software.

Figure 1-3 shows the functional architecture of a StormTracker-Site Manager carrier system. This document covers how to use the OAM&P capabilities of the StormTracker-Site Manager software to set up this system architecture.

Figure 1-3: StormTracker-Site Manager carrier system architecture



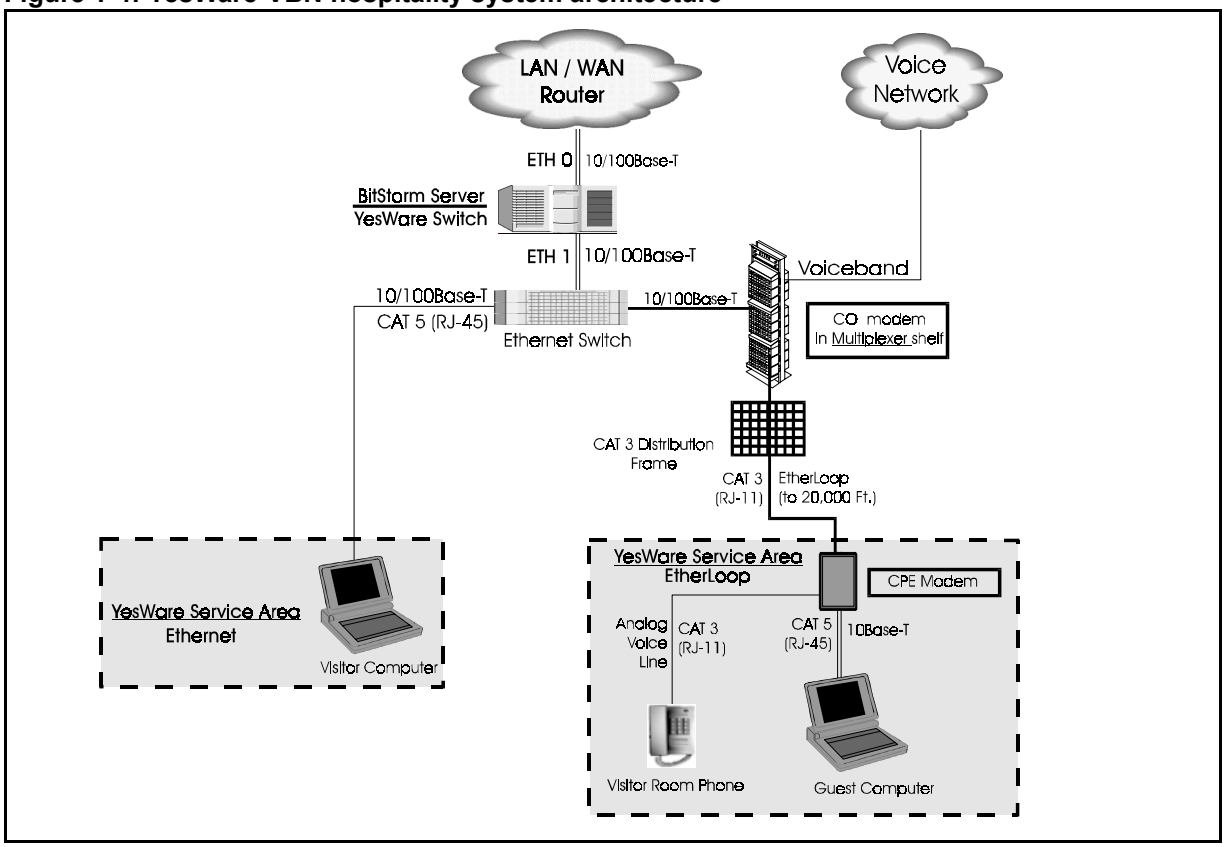
YesWare-VBN hospitality systems

YesWare-VBN systems are used for the provisioning and management of visitor-based networks in hospitality and other visitor-oriented enterprise environments. YesWare-VBN systems are typically provisioned and managed by enterprise IT personnel or subcontracted Internet Service Providers (ISPs). YesWare-VBN systems provide billable Internet access to temporary network visitors such as hotel guests. Customer billing is accomplished through the **YesWare-VBN** *Billing* module.

Figure 1-4 shows the functional architecture of a YesWare-VBN system. The *YesWare-VBN Applications User Guide* covers how to use the YesWare-VBN software to provision a visitor-based network.

> ***Note:*** The OAM&P functions of the **StormTracker-Site Manager** software group can be used to manage the EtherLoop™ modems that serve YesWare-VBN systems.

Figure 1-4: YesWare-VBN hospitality system architecture



BitStorm™ Server EtherLoop system components

The major function of the BitStorm™ Server's **StormTracker-Site Manager** software group is to provision and manage EtherLoop™ systems, whether the EtherLoop is part of a YesWare-VBN providing billable internet service, or strictly for managing modem performance using the **StormTracker-Site Manager**.

The EtherLoop system can contain the following components:

- StormPort™ customer premise equipment (CPE) modems
- BitStorm™ 1900 Access Multiplexer Shelf and components, including BitStorm™ DSL Access Multiplexer (DSLAM) modems
- MicroBurst 4212T mini-IP DSLAM

The following sections briefly describe each of these EtherLoop system components.

EtherLoop CPE modems

EtherLoop CPE modems are the connection points for the end-users to the EtherLoop system. Each EtherLoop CPE modem contains an RJ-45 port that accepts a connection from an Ethernet 10Base-T network interface card (NIC) on the end-user's PC. Each CPE modem also contains standard RJ-11 interfaces to connect to the telephone and jack from the existing voice facility phone line.

StormPort™ 400/600 Modems

The StormPort™ 400 and StormPort 600 are standalone units that support data rates of 4 Mbps and 6 Mbps, respectively.

Figure 1-5: StormPort 400/600 CPE modem

StormPort™ 410/610 Modems

The StormPort™ 410 and StormPort 610 are designed to serve as a base mount/station for an existing telephone, and also support data rates of 4 Mbps and 6 Mbps, respectively.

Figure 1-6: StormPort 410/610 CPE modem

BitStorm™ 1900 Access Multiplexer Shelf and components

The BitStorm™ 1900 Access Multiplexer shelf contains the components that control and direct data traffic between the StormPort CPE modems and the data network. In applications requiring data and voice service, a separate Voiceband Filter Shelf is required to split the voice traffic from the data traffic passing through the BitStorm™ 1900 Access Multiplexer shelf.

BitStorm™ 1900 Access Multiplexer Shelf

The BitStorm™ 1900 Access Multiplexer shelves are normally installed in the facility's central communications room and contain the following components:

- BitStorm™ DSLAM EtherLoop™ modems
- BitStorm™ Management Interface Unit (MIU)
- Shelf Power Card

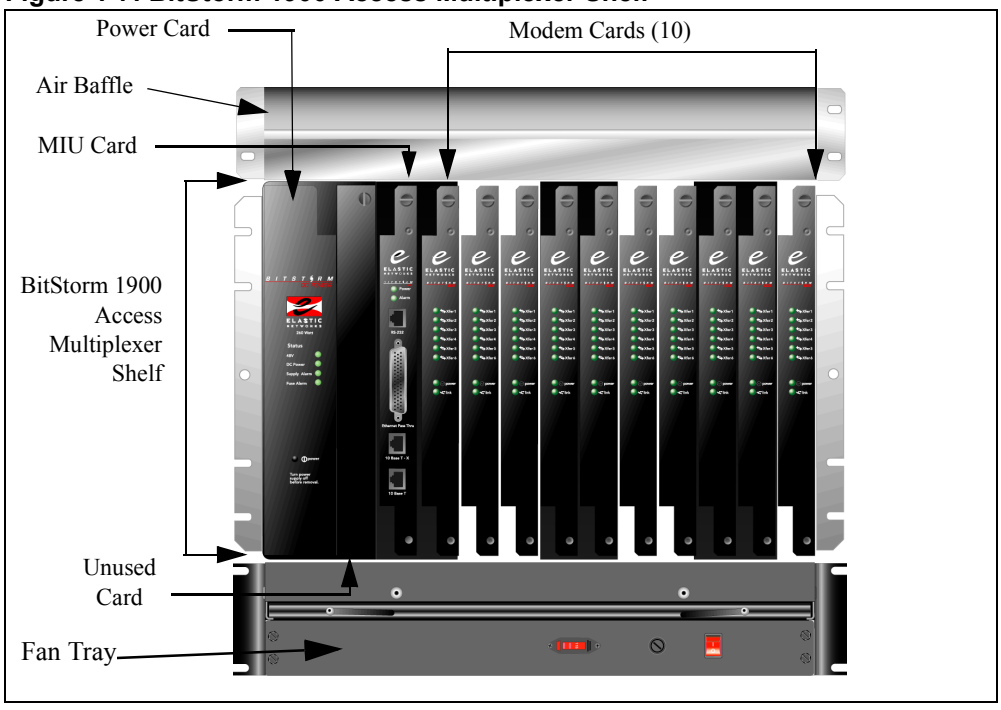
BitStorm™ 1900 Access Multiplexer auxiliary components

Depending on the configuration, certain additional auxiliary/support components for the BitStorm™ 1900 Access Multiplexer shelf are required. These include the following:

- Voiceband Filter Shelf (for applications requiring voice service)
- Fan Tray (required with 6306 & 6224 DSLAM modem cards)
- Air Baffle (all configurations)

See the *BitStorm™ 1900 Access Multiplexer Installation and Maintenance Guide*, 08-01101-01, for more information on auxiliary components.

Figure 1-7: BitStorm 1900 Access Multiplexer Shelf



BitStorm™ DSLAM EtherLoop™ modems

The shelf installation and cabling requirements vary for the BitStorm™ 1900 Access Multiplexer shelf depending on the BitStorm™ DSLAM EtherLoop™ modem cards installed. The table below lists the models of the BitStorm™ DSLAM EtherLoop™ modem cards supported by the BitStorm™ 1900 Access Multiplexer shelf.

BitStorm™ DSLAM Modem Model #	Description
4212	4 Mbps / 12 CPE modems per 1 multiplexer
6306	6 Mbps / 6 CPE modems per 1 multiplexer
6224	6 Mbps / 24 CPE modems per 1 multiplexer

BitStorm™ Management Interface Unit

The BitStorm™ Management Interface Unit (MIU) enables EtherLoop system administrators to manage BitStorm™ 1900 Access Multiplexer shelves at remote locations over TCP/IP WANs. To do this, the installer must configure the BitStorm MIU onto a network accessible to the WAN. The BitStorm 1900 installation document covers how to configure the BitStorm MIU on a network so that the shelf can be managed by the system administrator.

MicroBurst 4212T mini-IP DSLAM

MicroBurst™ 4212T mini-IP DSLAM is a one rack unit IP DSLAM that supports up to 12 EtherLoop CPE modems at 4 Mbps. The MicroBurst™ has built-in voiceband filtering capability and is environmentally hardened for applications such as digital loop carriers and other outside plant devices requiring high-speed access functionality or in low density applications.

The MicroBurst™ is well suited for the outside plant applications where heat dissipation and powering requirements inhibit deployment of conventional ATM-based DSL solutions. This is because of the low power consumption and low heat dissipation of EtherLoop IP DSL burst mode enabled systems. The first generation of the MicroBurst™ includes a single T-1 interface and Ethernet for interfacing to high capacity Gigabit Ethernet backhaul systems. Future evolution will include multi-T-1 and optical solutions.

Figure 1-8: MicroBurst 4212T mini-IP DSLAM

BitStorm™ Server system installation process

The process of installing a Bitstorm™ Server system, in broad terms, includes the following:

1 Install the TCP/IP Ethernet local host LAN/WAN network to support the BitStorm Server connection (if none existing).

2 Install the EtherLoop and/or Ethernet infrastructure.

3 Configure the BitStorm Server on an existing local host LAN/WAN.

4 Set up BitStorm Server administration.

5 Provision the EtherLoop infrastructure to support StormTracker-Site Manager OAM&P

6 Provision YesWare-VBN services.

This manual covers steps **3** through **5** of the BitStorm™ Server system installation process. The *YesWare-VBN Applications User Guide* contains the provisioning requirements for YesWare-VBN systems.

Organization of this manual

This document provides procedures for setting up the BitStorm Server on the local host network and for provisioning the EtherLoop system infrastructure. In general, the information is presented in the order in which you will need to use it.

StormTracker-Site Manager and Administration software modules

This introduces the purpose and function of the **StormTracker-Site Manager** and **Administration** software modules.

Chapter topic list

This chapter includes the following topics.

Topic	See
Module operation and document conventions	page 2-2
Home	page 2-4
Database	page 2-5
EtherCraft	page 2-6
Downloader	page 2-7
SNMP	page 2-8
Modex Daemon	page 2-9
StormTracker-Spectrum Manager	page 2-10
BitStorm Server Administration software module	page 2-11
Help	page 2-12

Module operation and document conventions

This section describes basic operation of the BitStorm™ Server software and the conventions used in this document for describing the software operations. The remainder of this chapter describes the purpose and function of the StormTracker-Site Manager and Administration modules covered by this document.

Module operations/dialogs

Software "modules" are used to provision and manage the BitStorm™ Server system. Module pages contain a variety of "operations" such as the CO Add/Search operation used to manually provision EtherLoop CO modems. Software operations are executed through "dialogs."

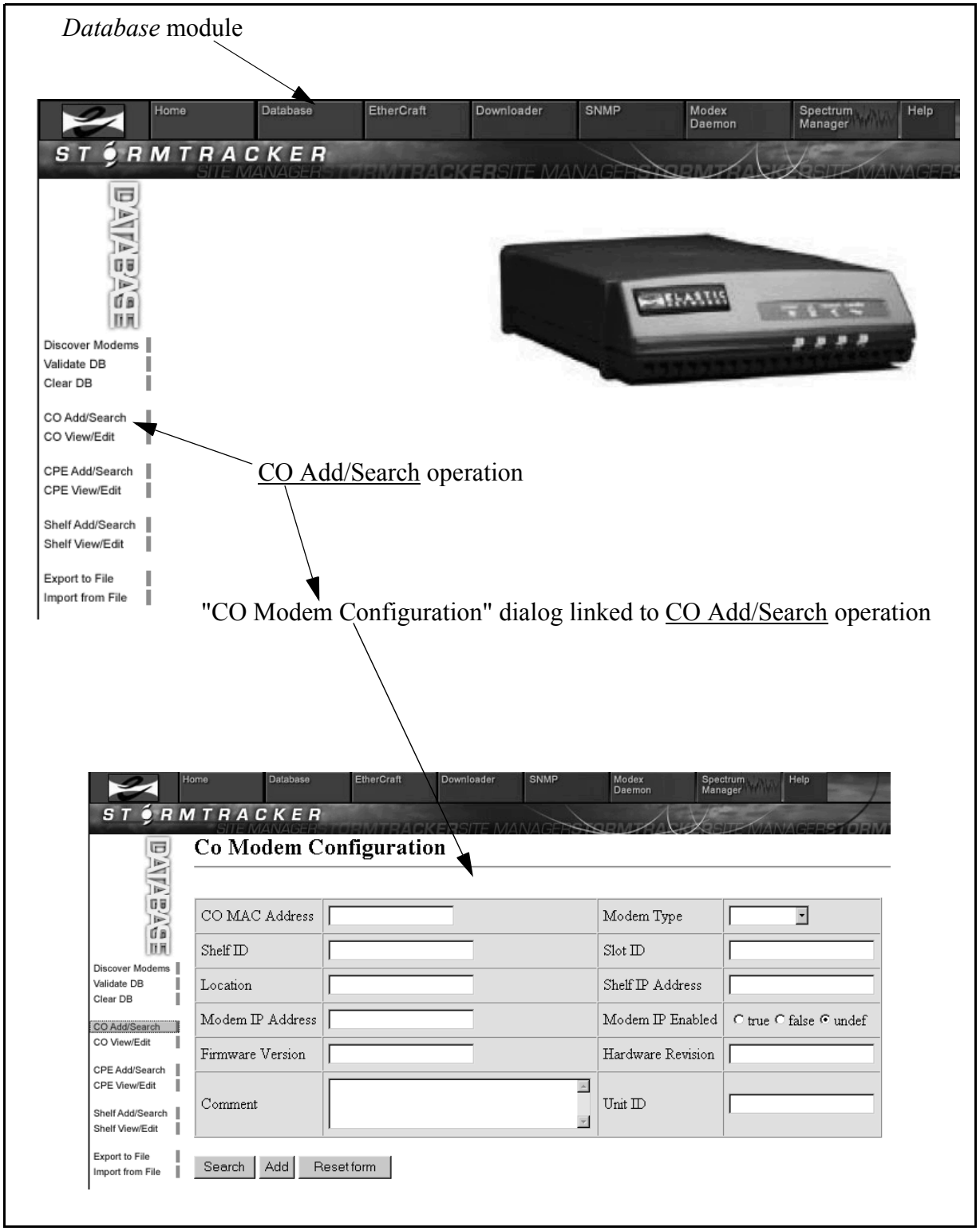
Figure 2-1 shows the module buttons on the StormTracker-Site Manager main menu.

Figure 2-1
StormTracker-Site Manager module buttons

Document conventions

In this document, module names are *italicized*, operation link names are underlined, and dialog names are in "quotation marks." Figure 2-2 on page 2-3 shows the *Database* module as an example.

Figure 2-2
***Database* module operations and dialogs**



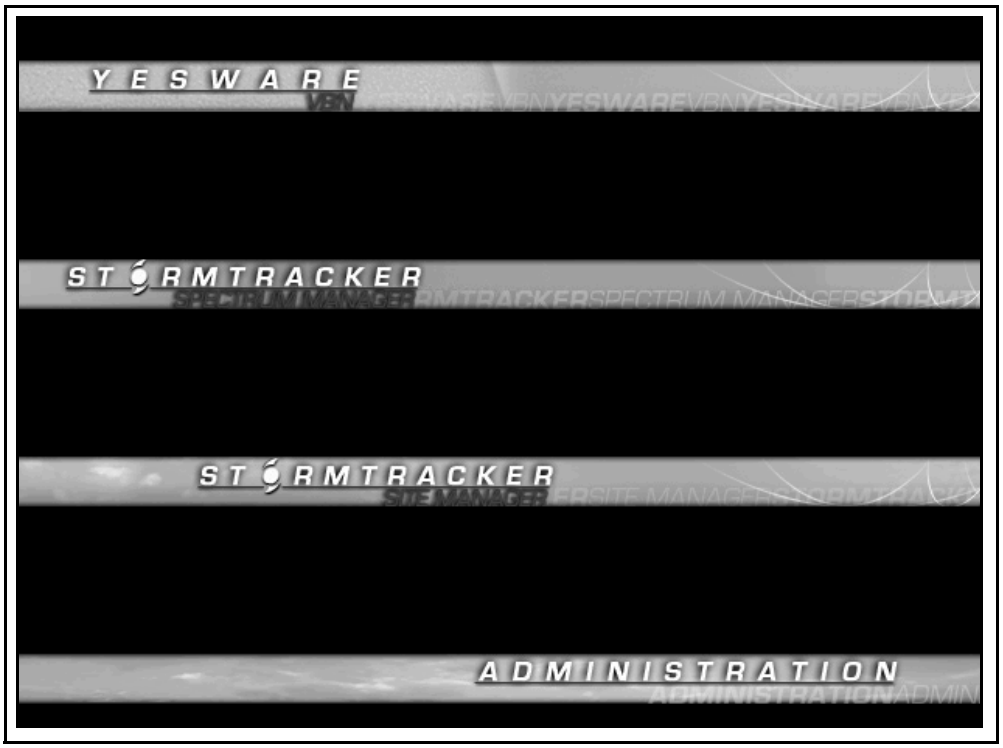
Home

The *Home* module page contains the links to the four software groups that reside on the BitStorm Server.

Figure 2-3 shows the *Home* module page with the four software groups.

> ***Note:*** The *Home* module page on non-YesWare-VBN systems will not have the link to the **YesWare-VBN** software group.

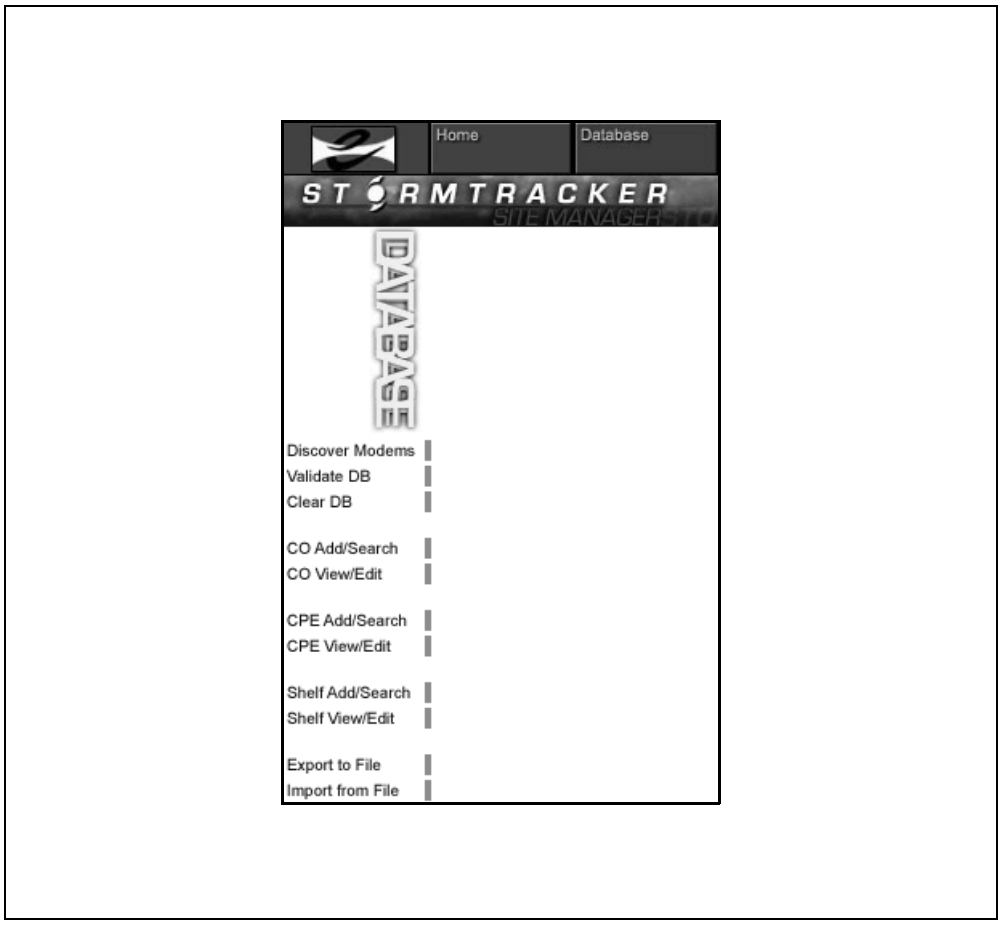
Figure 2-3
***Home* module page**



Database

The *Database* module is used to discover and provision EtherLoop™ CO and CPE modems and their associated ports. In addition, this module contains the operations to export/import EtherLoop™ databases and provision IP DSLAM shelves containing IP-manageble interfaces. Figure 2-4 shows the *Database* module page.

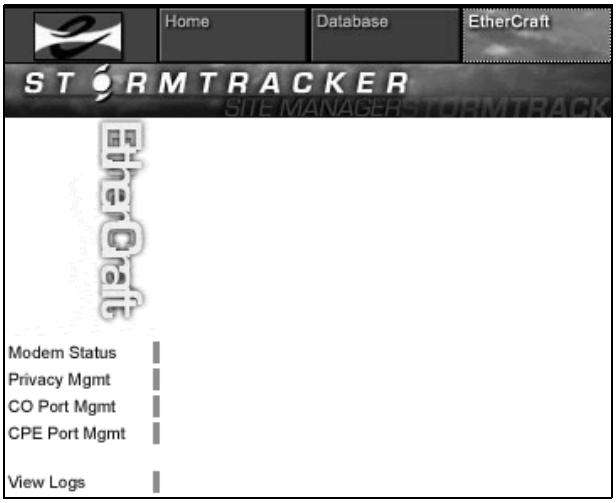
Figure 2-4
***Database* module page**



EtherCraft

The EtherCraft module is used to control and monitor EtherLoop modems from a remote PC/workstation using a Web browser. EtherCraft can be used to check modem status and monitor performance, set privacy filters, enable and disable CO/CPE modem ports, and get and clear logs. Figure 2-5 shows the *EtherCraft* module page.

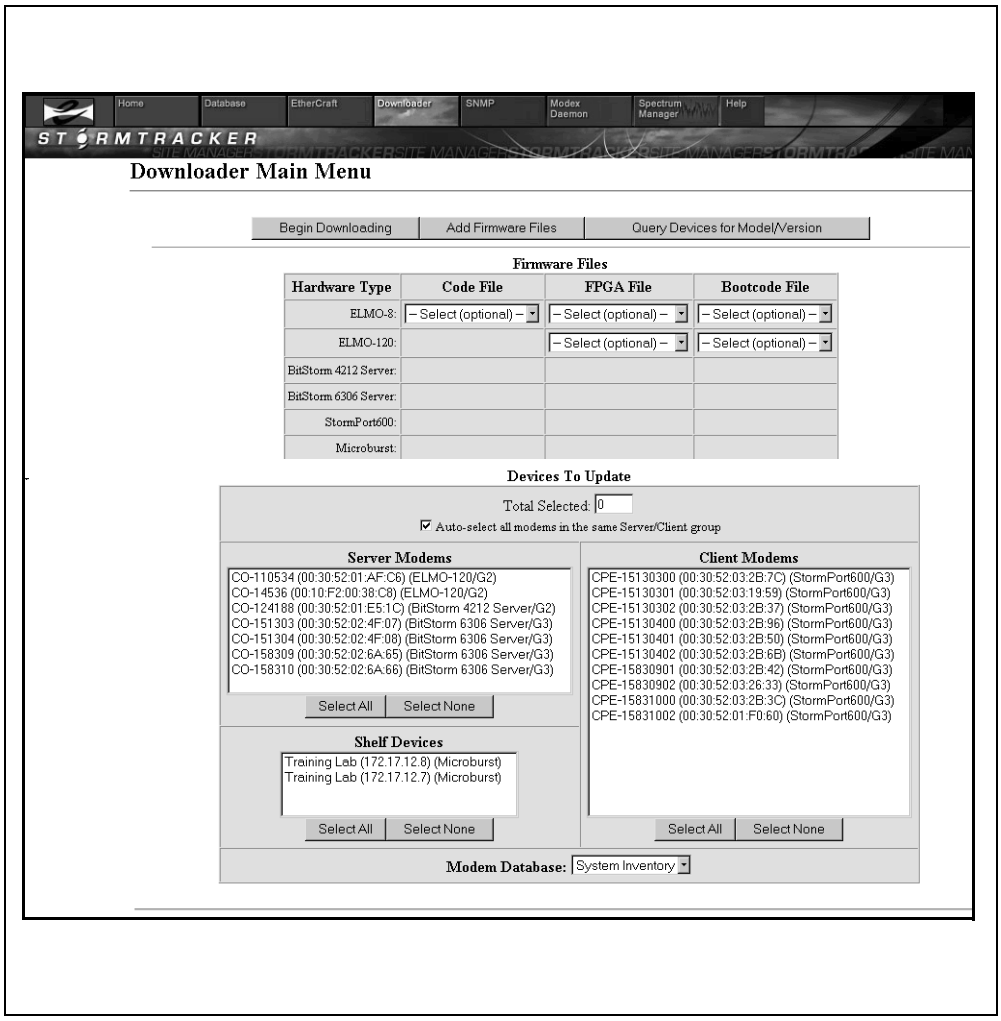
Figure 2-5
***EtherCraft* module page**



Downloader

The *Downloader* module is used to download firmware upgrades to the EtherLoop modem database from a file located on the administrator's workstation or on a reachable network workstation. Figure 2-6 shows the *Downloader* module page.

Figure 2-6
***Downloader* module page**



SNMP

EtherLoop modems do not support the Simple Network Management Protocol (SNMP) directly. However, the modems do support the proprietary Modex protocol, and the BitStorm Server supports both SNMP and Modex. Through the BitStorm Server's SNMP and the Modex Daemon functions, the StormTracker-Site Manager implements both protocols and thus serves as the SNMP proxy agent for the EtherLoop modems.

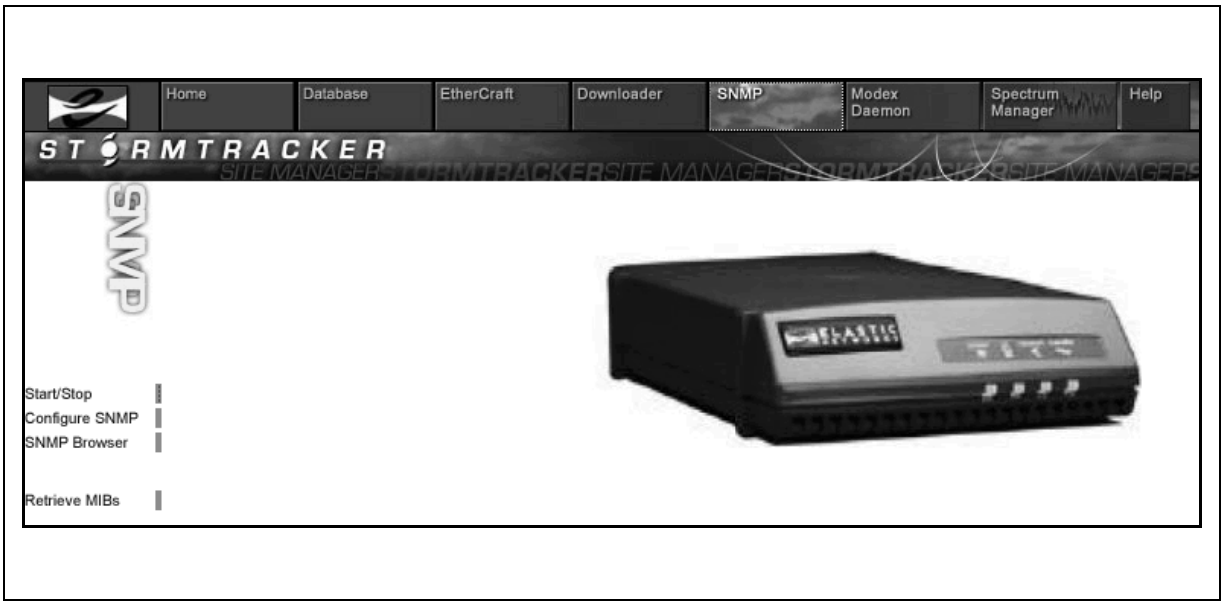
The SNMP proxy agent on the BitStorm Server accepts commands from an SNMP Network Management Station (NMS) running a third-party SNMP manager such as *HP OpenView*. The SNMP proxy agent takes the commands and retrieves statistics about the operation and performance of EtherLoop modems attached to the network using the *Modex Daemon*.

The *SNMP* module can be used to startand stop the SNMP proxy agent, and to configure the MIB to generate SNMP traps to a designated IP address. In addition, the SNMP Browser operation can be used to query the StormTracker-Site Manager database for EtherLoop modem information.

Figure 2-7 shows the *SNMP* module page.

> ***Note:*** This document does not cover the usage requirements for SNMP on the BitStorm Server. See the *BitStorm Server SNMP User Guide* for more information on using the StormTracker-Site Manager's SNMP capabilities.

Figure 2-7
***SNMP* module page**



Modex Daemon

The *Modex Daemon* module controls all direct communication between the EtherLoop modems and the BitStorm Server. It is started at bootup and runs continuously. The daemon executes functions on the EtherLoop modems such as the following:

- SNMP get/set commands
- *EtherCraft* modem status polling and controls
- EtherLoop modem firmware downloads

The *Modex Daemon* module contains operations to start and stop the daemon without having to re-start the BitStorm Server, and to configure which BitStorm Server interface (**ETH 0** or **ETH 1**) the Modex daemon will use.

Figure 2-8 shows the *Modex Daemon* module page.

Figure 2-8
***Modex Daemon* module page**

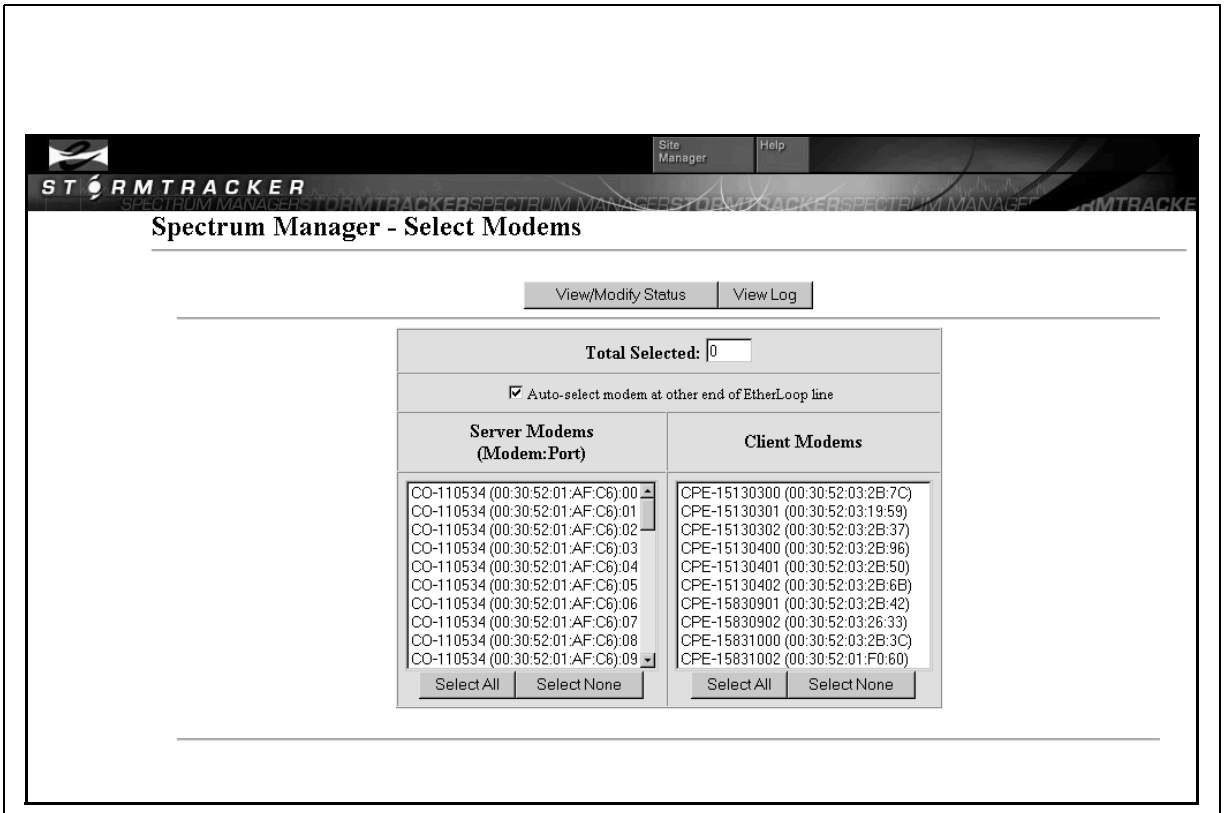
StormTracker-Spectrum Manager

As mentioned in Chapter 1, the ***Spectrum Manager*** module is used to adjust EtherLoop modem signal transmission to maximize protection from EtherLoop signal interference, and/or to maximize bandwidth available for EtherLoop modem signal transmission.

The **StormTracker-Spectrum Manager** software is an optional BitStorm Server component and is purchased separately from the BitStorm Server, and is not covered by this document. The *StormTracker-Spectrum Manager User Guide* contains the complete instructions for using the **StormTracker-Spectrum Manager** software.

Figure 2-9 shows the ***Spectrum Manager*** module page. This module is accessible through either the BitStorm Server *Home* module page or through the *Spectrum Manager* module button in the **StormTracker-Site Manager** module group.

Figure 2-9
Spectrum Manager **module page**



BitStorm Server Administration software module

As mentioned in Chapter 1, the BitStorm Server **Administration** software is used to manage the BitStorm Server and supports the following major functions:

- shutdown and restart the server
- upgrade the server software
- configure the server network connections
- create users and manage user access to the server
- software license management and licensing updates

The **Administration** software currently consists of a single module. This module is accessible by clicking the **Administration** link the BitStorm Server *Home* module page.

Figure 2-10 shows the ***Administration*** module page.

Figure 2-10
***Administration* module page**

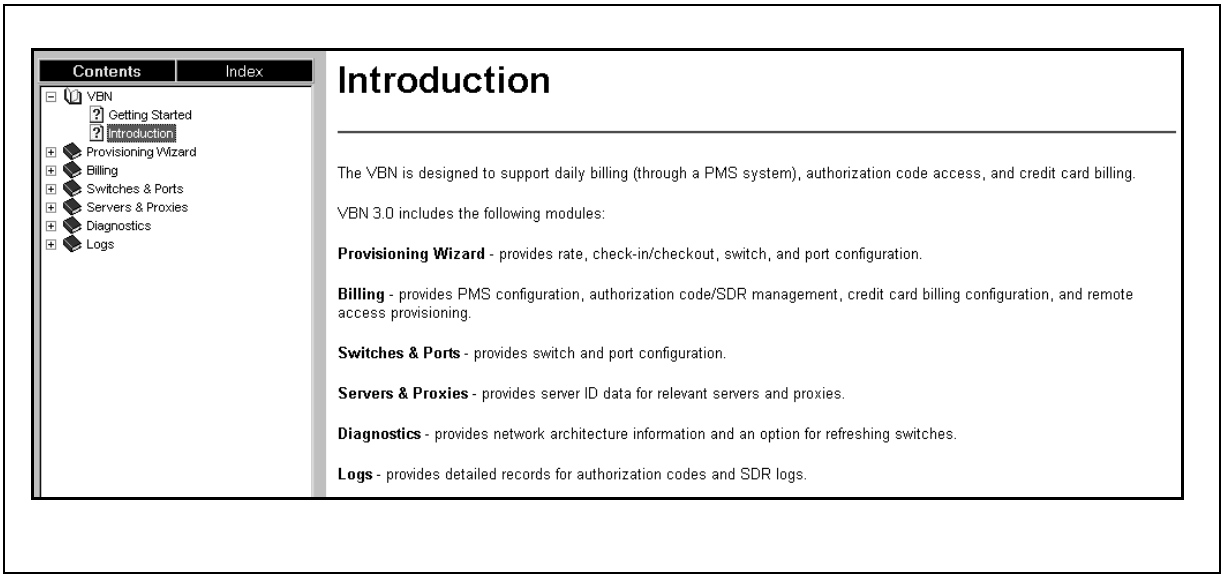
ADMINISTRATION
SYSTEM
Install/Upgrade
Restart System
Shutdown
Network
USER ADMINISTRATION
Add User
Change Password
Reset Password
Delete User
LICENSE
Update
DO NOT USE THIS PRODUCT UNTIL YOU HAVE REA
BELOW ("PROGRAMS"), THE COMPUTER OR PROC
OPENING THIS PACKAGE OR USING THIS PRODUCT
NOT AGREE, DO NOT USE THIS PRODUCT AND RE
ELASTIC WITHIN 10 BUSINESS DAYS OF THE PURCH
THIS LICENSE AGREEMENT IS YOUR PROOF OF LIC
LAW AND INTERNATIONAL COPYRIGHT TREATIES. S
have signed a written license agreement or an agreeme
of said executed written agreement shall control; otherw
not be changed except by a written signed agreement.

Help

The *Help* module contains information on all tasks done using the BitStorm Server software.

Figure 2-8 shows an example help topic on a *Help* module page.

Figure 2-11
***Help* module page**


Contents
Index
VBN
Getting Started
Introduction
Provisioning Wizard
Billing
Switches & Ports
Servers & Proxies
Diagnostics
Logs
Introduction
The VBN is designed to support daily billing (through a PMS system), authorization code access, and credit card billing.
VBN 3.0 includes the following modules:
Provisioning Wizard - provides rate, check-in/checkout, switch, and port configuration.
Billing - provides PMS configuration, authorization code/SDR management, credit card billing configuration, and remote access provisioning.
Switches & Ports - provides switch and port configuration.
Servers & Proxies - provides server ID data for relevant servers and proxies.
Diagnostics - provides network architecture information and an option for refreshing switches.
Logs - provides detailed records for authorization codes and SDR logs.

BitStorm Server host network configuration

This chapter describes the methods for connecting to the BitStorm Server and using the StormTracker Configuration Manager to configure the BitStorm Server on the host network.

Chapter topic list

This chapter includes the following topics.

Topic	See
BitStorm Server	page 3-2
BitStorm Server console connection methods	page 3-4
BitStorm Server interface: StormTracker Configuration Manager	page 3-7

Chapter task list

This section includes the following tasks.

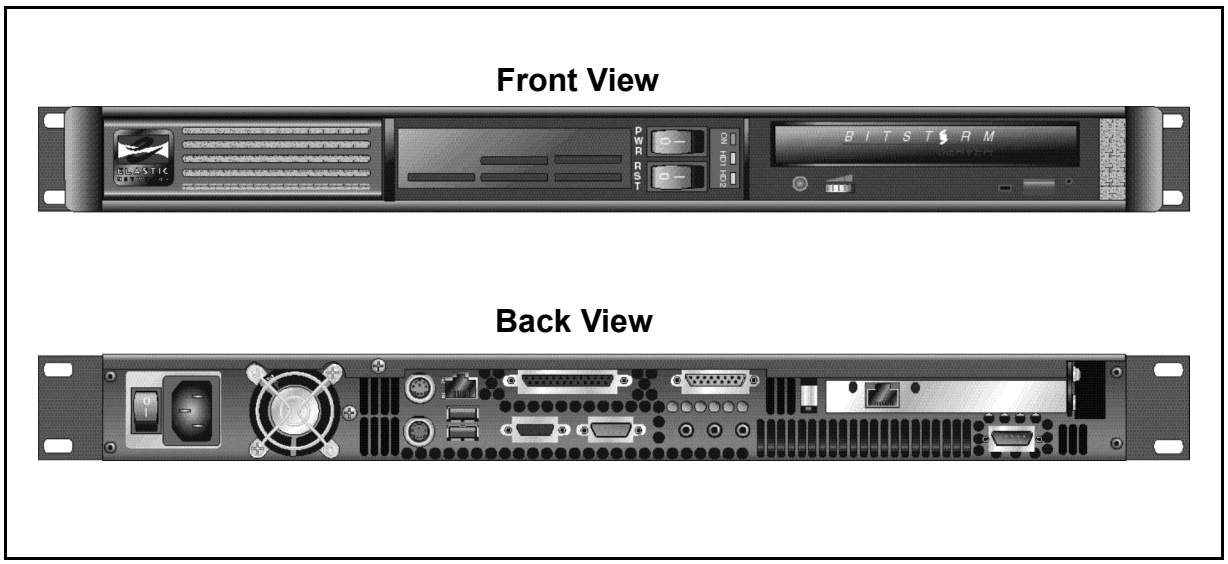
Procedure	Task	See
3-1	Configuring the BitStorm Server host network interface	page 3-10
3-2	Setting the BitStorm Server date and time	page 3-14
3-3	Setting the DNS nameserver(s) for the BitStorm Server	page 3-16

BitStorm Server

The BitStorm Server is used to provision and manage services to the YesWare system infrastructure and clients. The BitStorm Server resides as a standard "host" on a local TCP/IP Ethernet host network.

Figure 3-1 shows the BitStorm Server unit.

Figure 3-1
BitStorm Server unit



BitStorm Server functional components

The BitStorm Server unit has the following functional components:

- two Ethernet 10Base-T network interface cards (**ETH 0** and **ETH 1**)
- two RS-232 serial ports (COM1 and COM2)
- 110/120 V AC power connector
- monitor and keyboard connectors

Site Manager network and YesWare-VBN interfaces - ETH 0 and ETH 1

The two Ethernet 10/100 Base-T network interface cards (NICs) in the BitStorm Server (**ETH 0** and **ETH 1)** provide the connectivity for the YesWare-VBN to access the Internet through a host network. The **ETH 0** interface connects the BitStorm Server to the Site Manager host network. The **ETH 1** interface connects visitors on YesWare's Visitor-Based Network (VBN) to the BitStorm Server for access to YesWare services.

Figure 3-2 on page 3-3 shows the component connections on the back of the BitStorm Server unit. Table 3-1 on page 3-3 describes the function of each component.

Figure 3-2
BitStorm Server connections

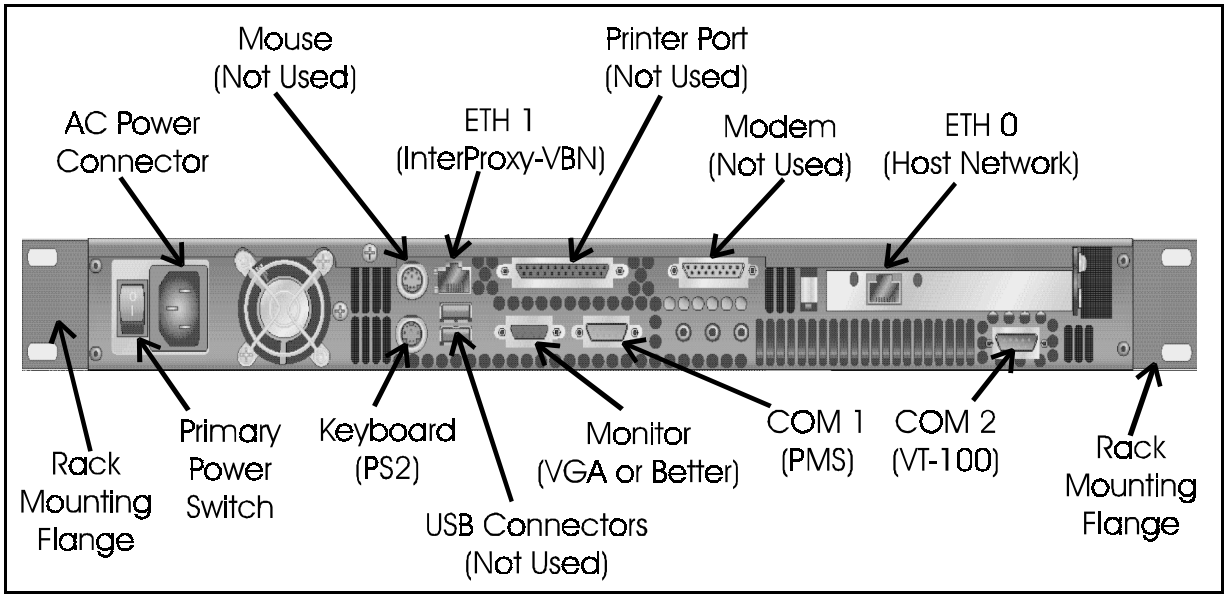


Table 3-1
BitStorm Server component connector functions

BitStorm Server Connector	Description/Function
Primary Power Switch	Controls power to unit. Secondary switch on front used as reset.
AC Power Connector	110/120 V AC input.
Keyboard	Standard PS2 keyboard interface.
USB Connector (not used)	Universal Serial Bus (USB) device interface.
COM 1	RS232 serial interface to Property Management System (PMS) or serial printer.
COM 2	RS232 serial interface for VT-100 terminal (or terminal emulator) used with BitStorm Server console interface.
Mouse (not used)	PS2 mouse interface.
Printer Port (not used)	Parallel printer interface.
Monitor	15-pin D-Sub monitor interface for VGA, SVGA or later model.
Modem (not used)	Analog modem connector
ETH 0	Ethernet 10/100Base-T interface to host network (LAN or WAN).
ETH 1	Ethernet 10/100Base-T interface to YesWare's InterProxy clients.

BitStorm Server console connection methods

The BitStorm Server "console" consists of connectors located on the back of the BitStorm Server used to access the StormTracker Configuration Manager. You can connect to the BitStorm Server console using any one of the following methods:

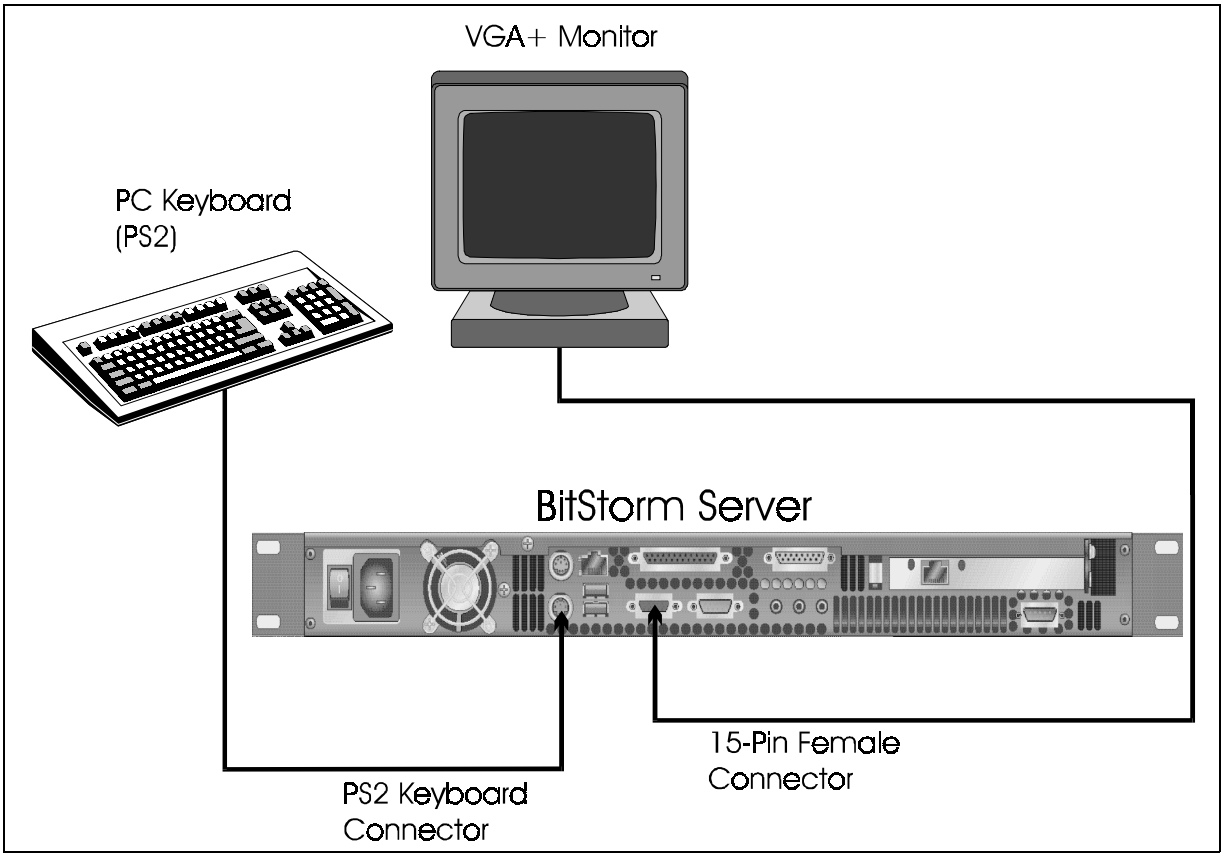
- keyboard (PS2) and monitor (VGA or better)
- VT-100 terminal emulation program on a PC with a serial communications port and a null-modem cable
- VT-100 terminal with a null-modem cable
- telnet from a PC to the BitStorm Server **ETH 0** interface

The following sections illustrate these BitStorm Server console connection methods.

BitStorm Server keyboard/monitor connections

Figure 3-3 shows the method for connecting a keyboard/monitor combination to the BitStorm Server.

Figure 3-3
BitStorm Server keyboard/monitor connections



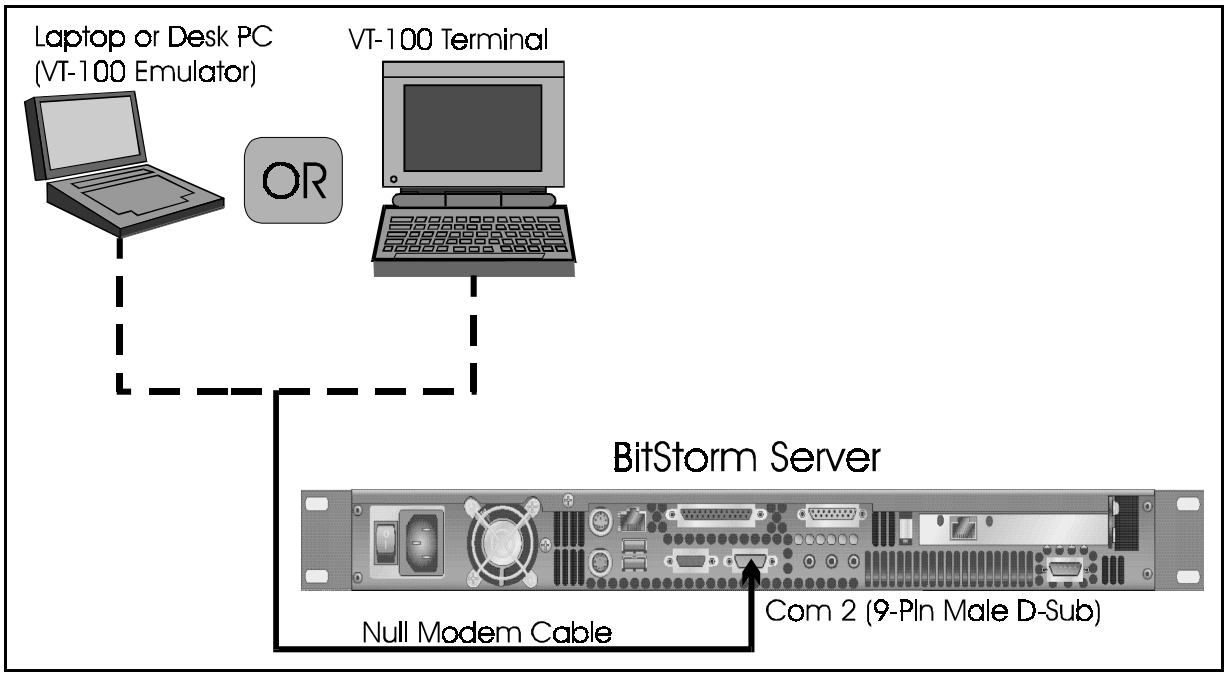
BitStorm Server PC/VT-100 connection

Figure 3-4 shows the method for connecting a PC with a VT-100 terminal emulator or a VT-100 terminal to the BitStorm Server serial port (COM 2). Table 3-2 lists the COM 2 VT-100 terminal communication settings.

Table 3-2
COM 2 VT100 terminal communication settings

Setting	Value
Baud Rate	9600
Start Bits	8
Parity	None
Stop Bits	1

Figure 3-4
BitStorm Server PC or VT-100 terminal console connection

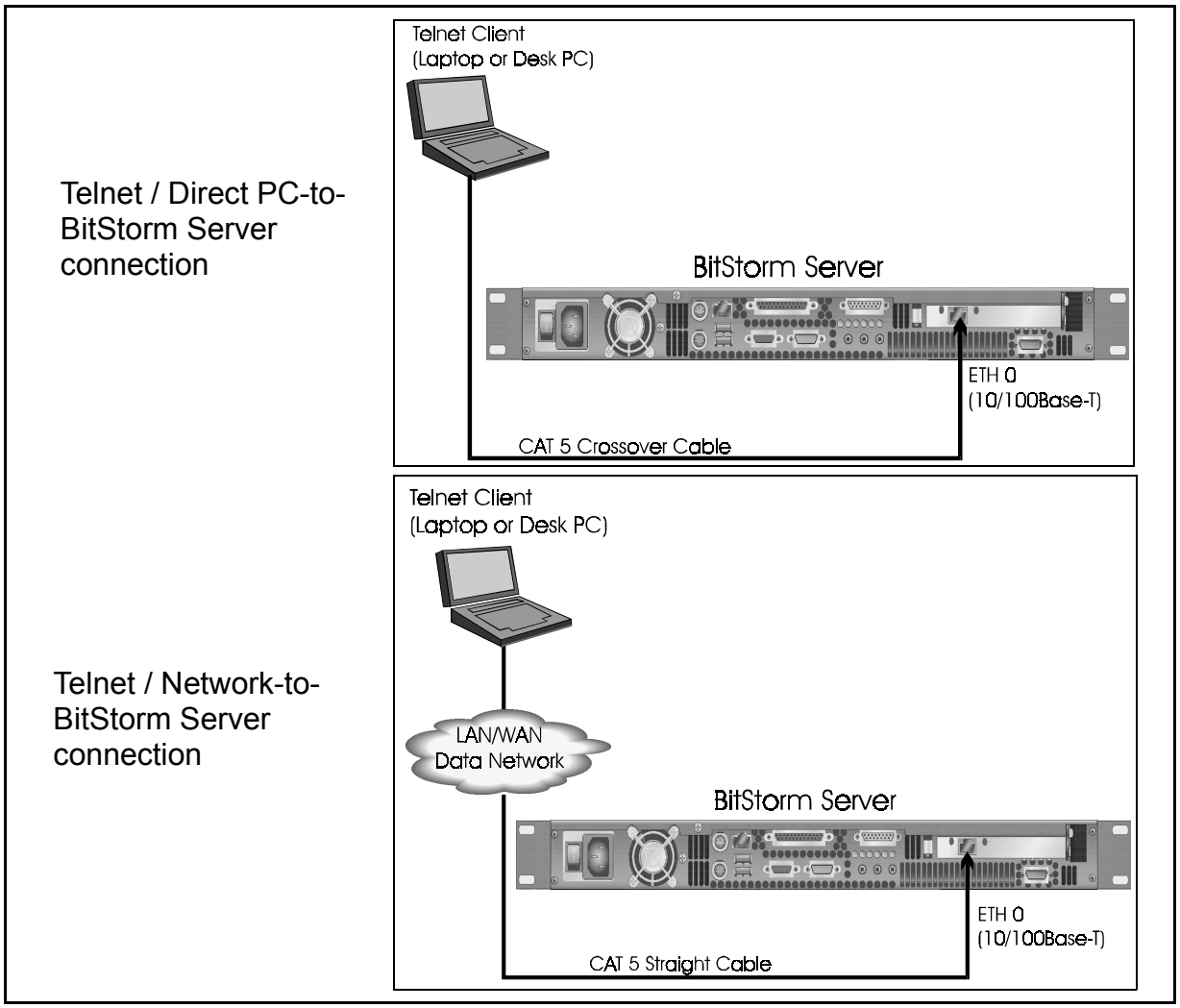


BitStorm Server telnet connection

For the initial configuration of the BitStorm Server, you can telnet to the StormTracker Configuration Manager by connecting directly to the **ETH 0** interface using a Category 5 cross-over cable. You can also telnet to the StormTracker Configuration Manager over an existing network connection to the **ETH 0** interface to change configuration settings. Figure 3-5 on page 3-6 shows the methods for connecting to the StormTracker Configuration Manager over telnet.

> ***CAUTION - Possible network conflict***
> The BitStorm Server ETH 0 interface has a default TCP/IP address configuration which could conflict with the host network. DO NOT connect the ETH 0 interface to a host network until you have re-configured the ETH 0 interface with a TCP/IP configuration that is valid for the host network.

Figure 3-5
BitStorm Server telnet connections



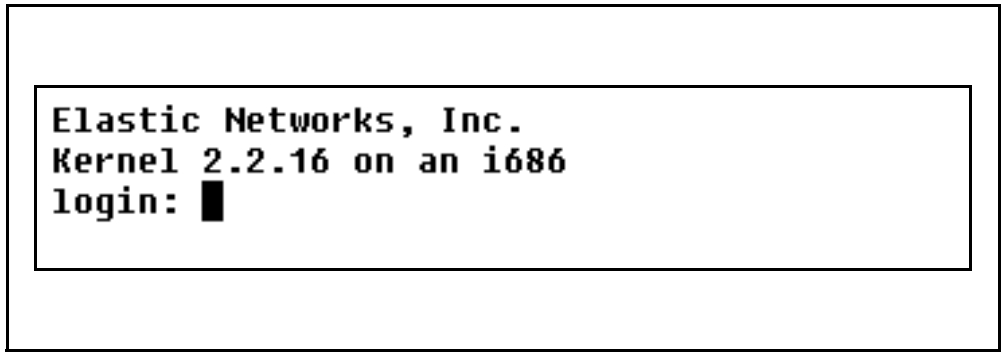
BitStorm Server interface: StormTracker Configuration Manager

The BitStorm Server console interface is called the StormTracker Configuration Manager, a command-based interface used to configure the BitStorm Server on the host network. The StormTracker Configuration Manager can also be used to conduct low-level system diagnostics such as "ping" tests and to view route-table and **ETH 0/ETH 1** port assignments.

StormTracker Configuration Manager login default

Figure 3-6 shows the "login" prompt of the StormTracker Configuration Manager. The default login name is **admin** and the password is **etherloop** (case-sensitive).

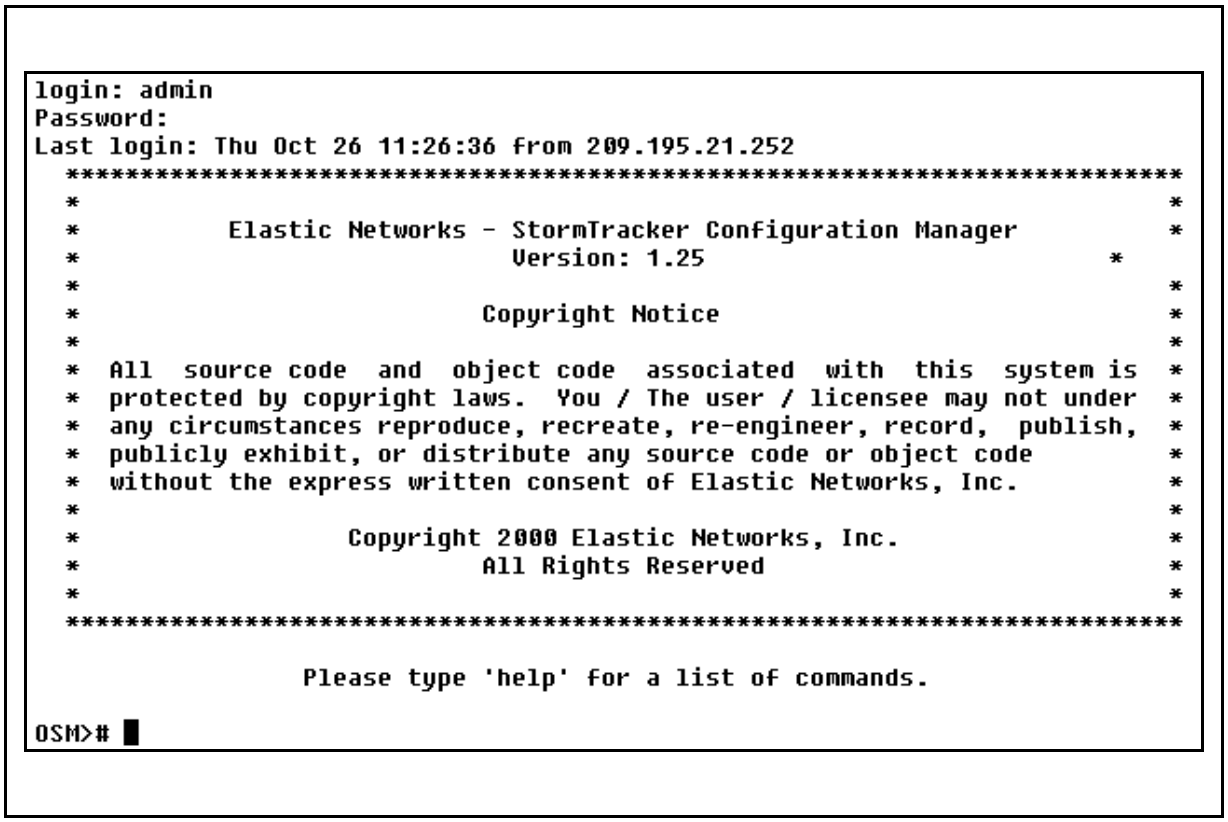
Figure 3-6
StormTracker Configuration Manager login prompt



StormTracker Configuration Manager welcome screen and prompt

Figure 3-7 shows the"Welcome" screen and **OSM>#** prompt you should see after entering the login name and password. Table 3-3 on page 3-9 lists and defines the commands available in the StormTracker Configuration Manager. Procedure 3-1 on page 3-10 describes the procedure for using the StormTracker Configuration Manager to configure BitStorm Server on the host network.

Figure 3-7
StormTracker Configuration Manager Welcome screen and command prompt


login: admin
Password:
Last login: Thu Oct 26 11:26:36 from 209.195.21.252
Elastic Networks - StormTracker Configuration Manager
Version: 1.25
Copyright Notice
All source code and object code associated with this system is protected by copyright laws. You / The user / licensee may not under any circumstances reproduce, recreate, re-engineer, record, publish, publicly exhibit, or distribute any source code or object code without the express written consent of Elastic Networks, Inc.
Copyright 2000 Elastic Networks, Inc.
All Rights Reserved
Please type 'help' for a list of commands.
OSM>#

StormTracker Configuration Manager commands

Table 3-3 lists the StormTracker Configuration Manager commands used to configure the BitStorm Server.

Table 3-3
StormTracker Configuration Manager commands

Command	Function	Syntax
help	Displays this list of commands.	help
route	Display BitStorm Server routing table.	route
port	Display BitStorm Server ETH 0 and ETH 1 port settings.	port
ping	Test basic communications between the BitStorm Server, client computers, and the host network.	ping [IP address or DNS name]
passwd	Change admin user password. For security purposes, use this command to change the default password after the first login.	passwd
configure	Configure the **ETH 0** interface network IP address, gateway, BitStorm Server host name (see nameserver command below), and time zone.	configure See Procedure 3-1 on page 3-10.
nameserver (optional)	Specify the IP address of the nameserver the BitStorm Server will use.	nameserver (displays current nameserver settings) nameserver [front/last/del] (adds or deletes nameservers)
date	Display and set system date and time	date
reboot	Shut down and re-start the BitStorm Server. Always use this command or the Web interface to re-boot the BitStorm Server. Never use only the power switch for a re-boot, as an uncontrolled shutdown/re-start could corrupt the StormTracker Configuration Manager software.	reboot
shutdown	Shut down the BitStorm Server. Always use this command or the Web interface to shut down the BitStorm Server. Never use only the BitStorm Server power switch for a shutdown.	shutdown
exit	Close the StormTracker Configuration Manager and exit to the login prompt. To prevent unauthorized access to the BitStorm Server, always use this command after configuration tasks are done.	exit
timezone	Change the time zone used by the BitStorm Server.	timezone

Procedure 3-1
Configuring the BitStorm Server host network interface

This procedure explains how to configure the BitStorm Server host network interface (**ETH 0**) using the StormTracker Configuration Manager.

Requirements

To perform this procedure, you need the following:

- valid TCP/IP configuration for the BitStorm Server **ETH 0** network interface, including the following:
  - IP address
  - network mask (subnet) address
  - network gateway address
- host name for the BitStorm Server
- DNS nameserver IP address
- time zone information for the BitStorm Server host network

Action

Step	Action
1	Connect to the YesWare console using one of the methods described in “BitStorm Server console connection methods” on page 3-4.

2	Connect the BitStorm Server power plug to an appropriate power source, and flip the power switch ON.
	After the BitStorm Server completes its power-on initialization sequence, the YesWare login prompt should appear as follows:
	`Elastic Networks, Inc.`
	`Kernel 2.2.16 on an i686`
	`login:`

3	Enter the BitStorm Server login name and password.

—continued—

Procedure 3-1 (continued)
Configuring the BitStorm Server host network interface

Step	Action

The StormTracker Configuration Manager "welcome" screen and command prompt appear as shown in Figure 3-8.

Figure 3-8
StormTracker Configuration Manager "welcome" screen

```
login: admin
Password:
Last login: Thu Oct 26 11:26:36 from 209.195.21.252
  ********************************************************************************
  *                                                                              *
  *          Elastic Networks - StormTracker Configuration Manager               *
  *                             Version: 1.25                                    *
  *                                                                              *
  *                           Copyright Notice                                   *
  *                                                                              *
  *  All  source code  and  object code  associated  with  this  system is       *
  *  protected by copyright laws.  You / The user / licensee may not under       *
  *  any circumstances reproduce, recreate, re-engineer, record,  publish,       *
  *  publicly exhibit, or distribute any source code or object code              *
  *  without the express written consent of Elastic Networks, Inc.               *
  *                                                                              *
  *                   Copyright 2000 Elastic Networks, Inc.                      *
  *                             All Rights Reserved                              *
  *                                                                              *
  ********************************************************************************

                 Please type 'help' for a list of commands.

OSM>#
```

4 At the command prompt (OSM#>), type configure and press <ENTER>. The system displays the following:

```
OSM># configure

Configuring eth0...

OSM> Please enter IP Address:
```

5 Enter the valid host network IP address assigned to the BitStorm Server ETH 0 network interface. The system should appear similar to the following:

```
OSM># configure

Configuring eth0...

OSM> Please enter IP Address: 172.17.10.253
OSM> Please enter Network Mask:
```

—continued—

Procedure 3-1 (continued)
Configuring the BitStorm Server host network interface

Step	Action

6 Enter the valid network mask (subnet) address assigned to the BitStorm Server ETH 0 network interface. The system should appear similar to the following:

```
OSM># configure

Configuring eth0...

OSM> Please enter IP Address: 172.17.10.253
OSM> Please enter Network Mask: 255.255.255.0
OSM> Please enter gateway IP address (q to quit):
```

7 Enter the valid gateway IP address assigned to the BitStorm Server ETH 0 network interface. The system should appear similar to the following:

```
OSM># configure

Configuring eth0...

OSM> Please enter IP Address: 172.17.10.253
OSM> Please enter Network Mask: 255.255.255.0
OSM> Please enter gateway IP address (q to quit): 172.17.10.1
OSM> Please enter hostname:
```

8 Enter the host name assigned to the BitStorm Server ETH 0 network interface. If the BitStorm Server will use the Domain Name System (DNS), the BitStorm Server must have a valid DNS host name. The system should appear similar to the following:

```
OSM># configure

Configuring eth0...

OSM> Please enter IP Address: 172.17.10.253
OSM> Please enter Network Mask: 255.255.255.0
OSM> Please enter gateway IP address (q to quit): 172.17.10.1
OSM> Please enter hostname: DocTrain330.elastic.com
Please select the corresponding number for your timezone:
   1 - Alaska
   2 - Aleutian
   3 - Arizona
   4 - Central
   5 - East-Indiana
   6 - Eastern
   7 - Hawaii
   8 - Indiana-Starke
   9 - Michigan
   10 - Mountain
   11 - Pacific
   12 - Samoa
   13 - relative to GMT
```

—continued—

Procedure 3-1 (continued)
Configuring the BitStorm Server host network interface

Step	Action

9 Select the time zone from the list in which the BitStorm Server resides, and enter the corresponding number. The system should appear similar to the following:

```
Please select the corresponding number for your timezone:
   1 - Alaska
   2 - Aleutian
   3 - Arizona
   4 - Central
   5 - East-Indiana
   6 - Eastern
   7 - Hawaii
   8 - Indiana-Starke
   9 - Michigan
   10 - Mountain
   11 - Pacific
   12 - Samoa
   13 - relative to GMT
6

You specified the following settings:
IP Address:     172.17.10.253
NetMask:        255.255.255.0
Gateway:        172.17.10.1
Hostname:       DocTrain330.elastic.com
Domain name:    elastic.com
Time zone:      US/Eastern
OSM>
Do you want to commit these settings? (y/n)
```

10 If the configuration settings are correct, type y and press <ENTER>.

Go to Procedure 3-2 on page 3-14 to set the system date and time, and Procedure 3-3 on page 3-16 to configure the DNS nameserver.

STOP

You have completed this task.

Procedure 3-2
Setting the BitStorm Server date and time

This procedure explains how to use the StormTracker Configuration Manager **date** command to set the date and time for the BitStorm Server.

Requirements

To perform this procedure, you need the following:

- a connection to the BitStorm Server **ETH 0** network interface using one of the methods described in "BitStorm Server console connection methods" on page 3-4. host name for the BitStorm Server

Action

Step	Action

1 Login to the BitStorm Server (the steps for logging into the BitStorm Server are presented in Procedure 3-1 on page 3-10).

2 At the command prompt (OSM#>), type date and press <ENTER>. The system should appear similar to the following:

```
OSM>#  date

Current system date & local time:

Fri Mar 31 11:24:42 EST 2000

OSM> Would you like to reset the system date & time? (y/n)
```

3 Type y and press <ENTER>. The system should appear similar to the following:

```
OSM>#  date

Current system date & local time:

Fri Mar 31 11:24:42 EST 2000

OSM> Would you like to reset the system date & time? (y/n)
y

Enter date and time (MM/DD/YYYY HH:MM[AM/PM]):
```

—continued—

Procedure 3-2 (continued)
Setting the BitStorm Server date and time

Step	Action

4 Enter the system date and local time. The system should appear similar to the following:

```
OSM>#  date

Current system date & local time:

Fri Mar 31 11:24:42 EST 2000

OSM> Would you like to reset the system date & time? (y/n)
y

Enter date and time (MM/DD/YYYY HH:MM[AM/PM]):
03/31/2000 11:27AM

Current system date & local time:

Fri Mar 31 11:27:01 EST 2000

OSM>#
```

STOP

You have completed this task.

Procedure 3-3
Setting the DNS nameserver(s) for the BitStorm Server

Use this procedure to identify the DNS nameserver used by the BitStorm Server. The StormTracker Configuration Manager **nameserver** command can be used to display, add or delete the IP address(es) of the DNS nameserver(s) supporting the BitStorm Server. Nameserver addresses can be added to the beginning or the end of the nameserver list. This procedure describes each of these command capabilities.

Requirements

To perform this procedure, you need the following:

- a connection to the BitStorm Server **ETH 0** network interface using one of the methods described in "BitStorm Server console connection methods" on page 3-4. host name for the BitStorm Server
- a valid DNS nameserver IP address

> ***Valid host and domain name required***
> The BitStorm Server must also have a valid DNS host/domain name (host.domain.domain) defined using the StormTracker Configuration Manager **configure** command. See Procedure 3-1 on page 3-10.

Action

Step	Action
1	Login to the BitStorm Server (the steps for logging into the BitStorm Server are presented in Procedure 3-1 on page 3-10).
2	To display the existing nameserver addresses, type nameserver at the command prompt (OSM#>), and press <ENTER>. The system should appear similar to the following:

```
nameserver 192.168.2.1

Possible arguments to nameserver command:
  front - adds IP address to front of search list
  last  - adds IP address to end of search list
  del   - deletes IP address from list
OSM>#
```

—continued—

Procedure 3-3 (continued)
Setting the DNS nameserver(s) for the BitStorm Server

Step	Action

3 To add a nameserver to the beginning of the list of existing nameserver addresses, type nameserver front at the command prompt (OSM#>), and press <ENTER>. The system should appear similar to the following:

```
OSM>#  nameserver front
OSM>  Please enter IP Address: 192.168.2.2

nameserver 192.168.2.2
nameserver 192.168.2.1
```

4 To add a nameserver to the end of the list of existing nameserver addresses, type nameserver last at the command prompt (OSM#>), and press <ENTER>. The system should appear similar to the following:

```
OSM>#  nameserver last
OSM>  Please enter IP Address: 192.168.2.3

nameserver 192.168.2.2
nameserver 192.168.2.1
nameserver 192.168.2.3
```

5 To remove a nameserver from the list of existing nameserver addresses, type nameserver del at the command prompt (OSM#>), and press <ENTER>. The system should appear similar to the following:

```
OSM>#  nameserver del
OSM>  Please enter IP Address: 192.168.2.2

nameserver 192.168.2.1
nameserver 192.168.2.3

OSM>#  _
```

STOP

You have completed this task.

BitStorm™ Server administration

This chapter describes the operations of the *Administration* module and the procedures to prepare and verify the settings in the BitStorm Server software to support .

Chapter topic list

This chapter includes the following topics.

Topic	See
Using the Administration module	page 4-2

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
4-1	Using the BitStorm Server and YesWare modules for the first time	page 4-8
4-2	Setting up system users and passwords	page 4-11
4-3	Verifying the server network connection	page 4-12

Using the Administration module

The Administration software is used to manage the BitStorm Server.

- create users and manage user access to the server
- software license management and licensing updates

Figure 4-1 shows the Administration main page. The following sections cover the user requirements to perform the Administration operations.

Figure 4-1: Administration main page

Address
http://172.17.12.2/YesWare/jsp/a0000.html
Home
Help
ADMINISTRATION
SYSTEM
Install/Upgrade
Restart System
Shutdown
Network
USER ADMINISTRATION
Add User
Change Password
Reset Password
Delete User
LICENSE
Update
NOTICE TO USER: READ THE FOLLOWING CAREFUL
ELASTIC NETWORKS, INC. ("ELASTIC")
1121 ALDERMAN DRIVE, SUITE 100, ALPHARETTA, GEORGIA 3000
LICENSE AGREEMENT AND LIMITED PRODUCT WARRANTY ("LICE
DO NOT USE THIS PRODUCT UNTIL YOU HAVE READ THIS LICENSE (FOR PURPOSES OF THIS LICENSE "PRODUCT"
BELOW ("PROGRAMS"), THE COMPUTER OR PROCESSOR WHICH YOU HAVE PURCHASED. THE PROGRAM USE
OPENING THIS PACKAGE OR USING THIS PRODUCT INDICATES YOUR ACKNOWLEDGMENT THAT YOU HAVE READ
NOT AGREE, DO NOT USE THIS PRODUCT AND RETURN THE COMPLETE PRODUCT IN THE ORIGINAL PACKAGING
ELASTIC WITHIN 10 BUSINESS DAYS OF THE PURCHASE DATE AS NOTED ON THE APPLICABLE INVOICE EVIDENCIN
THIS LICENSE AGREEMENT IS YOUR PROOF OF LICENSE. PLEASE TREAT IT AS VALUABLE PROPERTY. THESE PR
LAW AND INTERNATIONAL COPYRIGHT TREATIES. Should you have any questions concerning this License, contact Elas
have signed a written license agreement or an agreement containing such terms in connection with the purchase of this Prod
of said executed written agreement shall control; otherwise, this License is the entire agreement between you and us, supers
not be changed except by a written signed agreement.

Administration / System function

The System function of the Administration software group supports the following operations:

- Install/Upgrade
- Restart System
- Shutdown
- Network

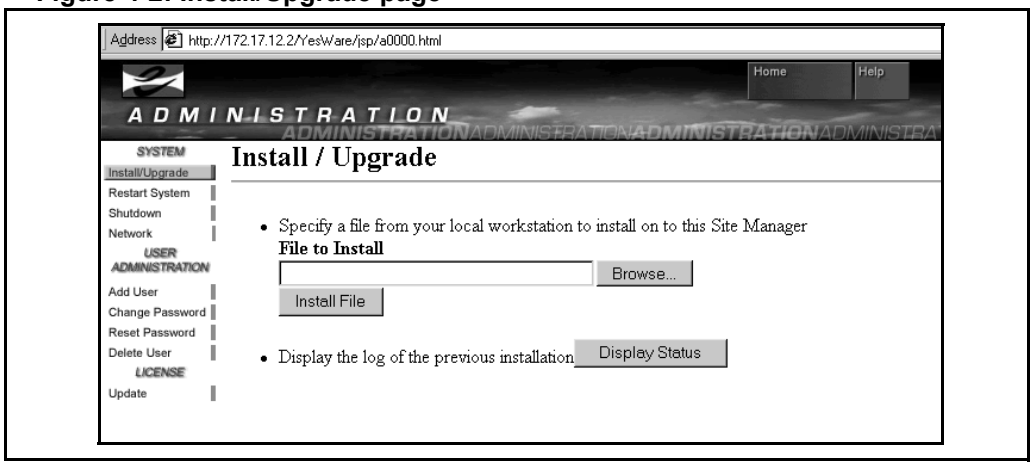
The table below describes each of these operations.

Operation	Description
Install/Upgrade	Upgrade the software mofules on the BitStorm Server.
Restart System	Restart the BitStorm Server.
Shutdown	Shutdown the BitStorm Server.
Network	View and/or modfy the network configuration

Install/Upgrade page

Figure 4-2 shows the Install/Upgrade page. System administrators must obtain an upgrade load file from Elastic Networks, and load the file on a local workstation. The administrator then use this screen to browse to the upgrade file and use it to upgrade the software modules on the BitStorm Server. This operation does not upgrade the EtherLoop modem firmware.

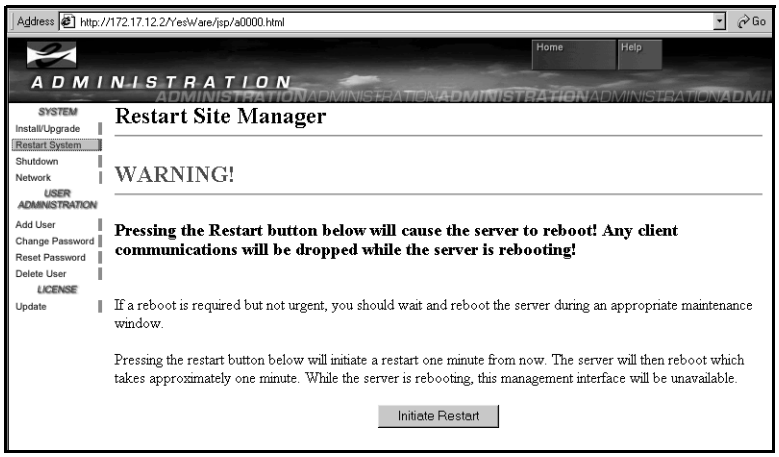
Figure 4-2: Install/Upgrade page



Restart System page

Figure 4-3 shows the Restart System page. System administrators should always use this command or the equivalent in the StormTracker-Configuration Manager to restart the BitStorm Server. If at all possible, never use only the power switch to restart the BitStorm Server, as this could corrupt the unit's file system.

Figure 4-3: Restart System page


Address http://172.17.12.2/YesWare/jsp/a0000.html
Go
Home
Help
ADMINISTRATION
SYSTEM
Install/Upgrade
Restart System
Shutdown
Network
USER ADMINISTRATION
Add User
Change Password
Reset Password
Delete User
LICENSE
Update
Restart Site Manager
WARNING!
Pressing the Restart button below will cause the server to reboot! Any client communications will be dropped while the server is rebooting!
If a reboot is required but not urgent, you should wait and reboot the server during an appropriate maintenance window.
Pressing the restart button below will initiate a restart one minute from now. The server will then reboot which takes approximately one minute. While the server is rebooting, this management interface will be unavailable.
Initiate Restart

Shutdown page

Figure 4-4 shows the Shutdown page. System administrators should always use this command or the equivalent in the StormTracker-Configuration Manager to shutdown the BitStorm Server. If at all possible, never use only the power switch to shutdown the BitStorm Server, as this could corrupt the unit's file system.

Figure 4-4: Shutdown page

Network page

Figure 4-5 shows the Network page. System administrators should always use this command or the equivalent in the StormTracker-Configuration Manager to shutdown the BitStorm Server. If at all possible, never use only the power switch to shutdown the BitStorm Server, as this could corrupt the unit's file system.

Figure 4-5: Network page

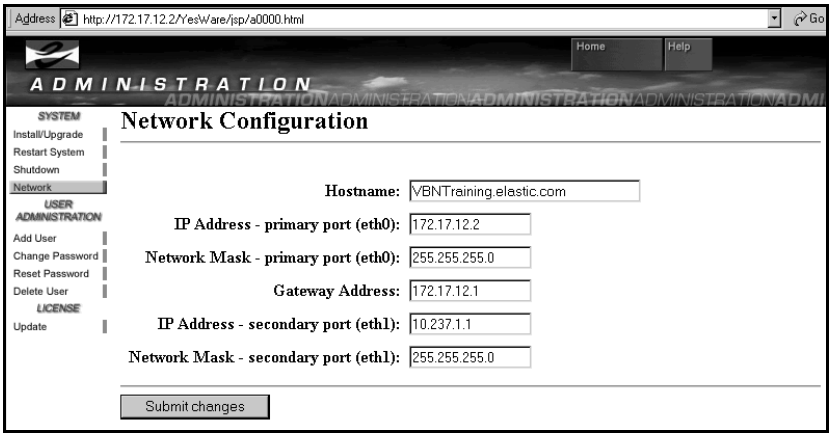


Table 4-1 defines each of the entries in the Network page.

Table 4-1: Network Configuration page

Field	Description
Hostname	The host name given by the LAN administrator to the BitStorm Server on the host network.
IP Address - primary port (eth0)	ETH 0 is the BitStorm Server's interface to the host LAN. This field is the IP address given by the LAN administrator to the BitStorm Server on the host network.
Network Mask - primary port (eth0)	The Network Mask for ETH 0 is given by the LAN administrator to the BitStorm Server on the host network.
Gateway Address	The Network Mask given by the LAN administrator to the BitStorm Server on the host network.
IP Address - secondary port (eth1)	ETH 1 is the BitStorm Server's interface to the YesWare-VBN. This field is the VBN IP address assigned by the BitStorm Server administrator.
Network Mask - secondary port (eth1)	This field is the VBN Network Mask assigned by the BitStorm Server administrator.

Administration / User Administration function

The User Administration function of the Administration software group supports the following operations:

- Add User
- Change Password
- Reset Password
- Delete User

The table below describes each of these operations.

Operation	Description
Add User	Add new user accounts to the BitStorm Server.
Change Password	Change the password of the active user (your own).
Reset Password	Change the password of the other users.
Delete User	Delete user accounts to the BitStorm Server.

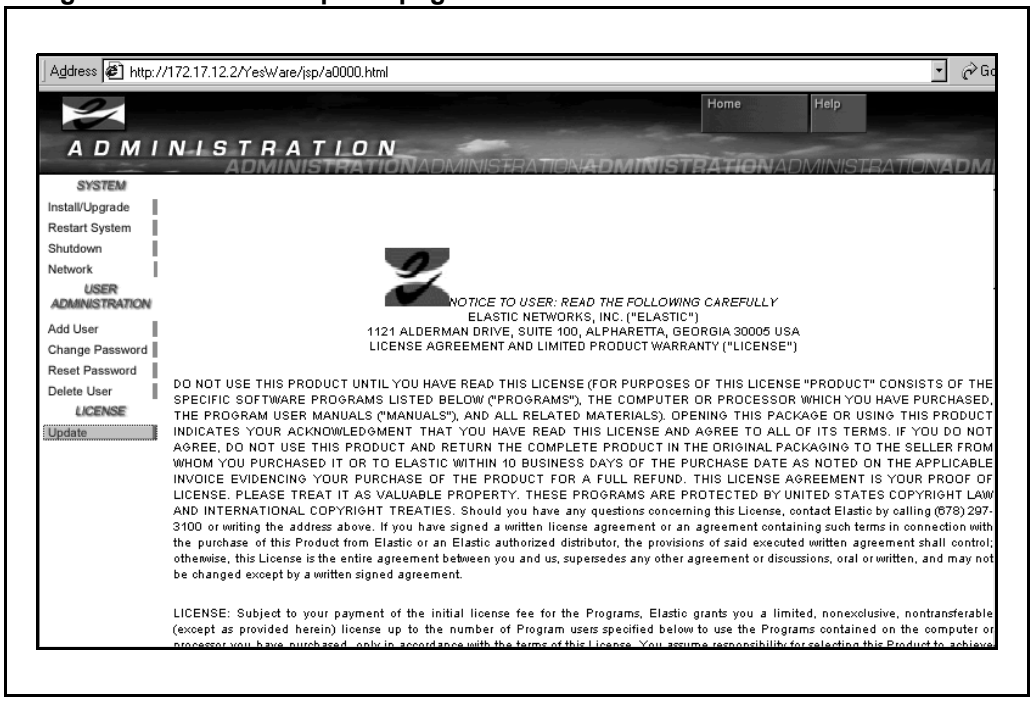
The BitStorm Server administrator should use the the Change Password operation to change the manager/manager login/password immediately after the first use of the system. Also, note that the BitStorm Server has no method of tracking user accounts and passwords. Records of accounts and passwords must be kept separate from the BitStorm Server.

Administration / License function

The License function of the Administration software group is used when new software is purchased for the BitStorm Server as an "add-on," and the License agreement needs to be updated. For example, if an administrator might purchase YesWare-VBN software for a BitStorm Server that previously had only StormTracker-Site Manager. For the YesWare-VBN software to become functional, the administrator would have to come to the License / Update page, scroll down to the bottom of the License Agreement, click the "Update" button, and enter the new License Key.

Figure 4-6 shows the License / Update page.

Figure 4-6: License / Update page


Address
http://172.17.12.2/YesWare/jsp/a0000.html
Home
Help
ADMINISTRATION
SYSTEM
Install/Upgrade
Restart System
Shutdown
Network
USER ADMINISTRATION
Add User
Change Password
Reset Password
Delete User
LICENSE
Update
NOTICE TO USER: READ THE FOLLOWING CAREFULLY
ELASTIC NETWORKS, INC. ("ELASTIC")
1121 ALDERMAN DRIVE, SUITE 100, ALPHARETTA, GEORGIA 30005 USA
LICENSE AGREEMENT AND LIMITED PRODUCT WARRANTY ("LICENSE")
DO NOT USE THIS PRODUCT UNTIL YOU HAVE READ THIS LICENSE (FOR PURPOSES OF THIS LICENSE "PRODUCT" CONSISTS OF THE SPECIFIC SOFTWARE PROGRAMS LISTED BELOW ("PROGRAMS"), THE COMPUTER OR PROCESSOR WHICH YOU HAVE PURCHASED, THE PROGRAM USER MANUALS ("MANUALS"), AND ALL RELATED MATERIALS). OPENING THIS PACKAGE OR USING THIS PRODUCT INDICATES YOUR ACKNOWLEDGMENT THAT YOU HAVE READ THIS LICENSE AND AGREE TO ALL OF ITS TERMS. IF YOU DO NOT AGREE, DO NOT USE THIS PRODUCT AND RETURN THE COMPLETE PRODUCT IN THE ORIGINAL PACKAGING TO THE SELLER FROM WHOM YOU PURCHASED IT OR TO ELASTIC WITHIN 10 BUSINESS DAYS OF THE PURCHASE DATE AS NOTED ON THE APPLICABLE INVOICE EVIDENCING YOUR PURCHASE OF THE PRODUCT FOR A FULL REFUND. THIS LICENSE AGREEMENT IS YOUR PROOF OF LICENSE. PLEASE TREAT IT AS VALUABLE PROPERTY. THESE PROGRAMS ARE PROTECTED BY UNITED STATES COPYRIGHT LAW AND INTERNATIONAL COPYRIGHT TREATIES. Should you have any questions concerning this License, contact Elastic by calling (678) 297-3100 or writing the address above. If you have signed a written license agreement or an agreement containing such terms in connection with the purchase of this Product from Elastic or an Elastic authorized distributor, the provisions of said executed written agreement shall control; otherwise, this License is the entire agreement between you and us, supersedes any other agreement or discussions, oral or written, and may not be changed except by a written signed agreement.
LICENSE: Subject to your payment of the initial license fee for the Programs, Elastic grants you a limited, nonexclusive, nontransferable (except as provided herein) license up to the number of Program users specified below to use the Programs contained on the computer or

Procedure 4-1
Using the BitStorm Server and YesWare modules for the first time

This procedure contains the requirements and steps involved in using YesWare for the first time.

Requirements

This section describes the requirements for accessing the YesWare web interface.

Connecting to the ETH 0 interface

To access the YesWare web interface, you must have access to the network where the BitStorm Server **ETH 0** interface resides. This can be done with a PC connected over a network, internetwork, simple passive hub, or through a direct connection to the BitStorm Server **ETH 0** interface. See Chapter 3 for more information.

> ***Direct PC connection to ETH 0***
> To connect a PC directly to the **ETH 0** interface, a Category 5 Ethernet **crossover** cable must be used and the PC must be configured as a TCP/IP node on the same LAN and subnet as the **ETH 0** interface.

Browsing to the ETH 0 URL

All YesWare modules are web-based, and are launched by browsing to the IP address configured for the BitStorm Server **ETH 0** network interface. Before using the YesWare modules described in this manual, you must know the IP address configured for the **ETH 0** interface.

> ***BitStorm Server default-configured ETH 0 IP address***
> To access the BitStorm Server, use the IP address configured using the console interface (see Chapter 3) or the default-configured **ETH 0** address.
>
> The BitStorm Server is configured before shipping with the following **ETH 0** IP address: **192.168.1.2**

Finding an unknown ETH 0 IP address configuration

If the IP configuration set for **ETH 0** is unknown, login to the StormTracker Configuration Manager and use the **port** command to display the **ETH 0** settings (**ETH 1** values are also displayed). See Chapter 3 for a description of the **port** command.

Note: The VT-100 may need to be adjusted to increase the window size ("buffer" setting) in order to see all the port data.

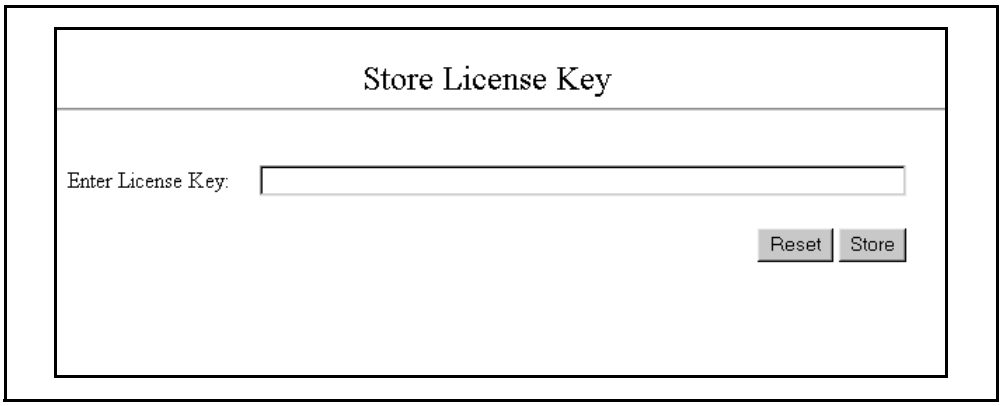
—continued—

Procedure 4-1 (continued)
Using the BitStorm Server and YesWare modules for the first time

Action

Step	Action
1	Launch the PC web browser (Internet Explorer or Netscape Navigator).
2	Specify the **ETH 0** Universal Resource Locator (URL), ***Note:*** The URL must include the ETH 0 IP address followed by the "yesware/jsp/" directory, as in the following example (for a BitStorm Server at ETH 0 IP address 10.255.254.2): **10.255.254.2/YesWare/jsp/** The "YesWare" in the URL is case-sensitive (Y/W, not y/w). Also, if the "/YesWare/jsp/" is not included in the **ETH 0** URL, the system will return a denial of access. If the **ETH 0** URL is entered correctly, the BitStorm Server *Home* page appears.
3	Click the **Administration** link to launch the the licensing agreement page.
4	Read the licensing agreement and click the "Accept" button. The "Store License Key" dialog appears as shown in **Figure 4-7**.

Figure 4-7
Store License Key dialog



5	Enter the 20-digit license key shipped with the server and click the "Store" button.

—continued—

Procedure 4-1 (continued)
Using the BitStorm Server and YesWare modules for the first time

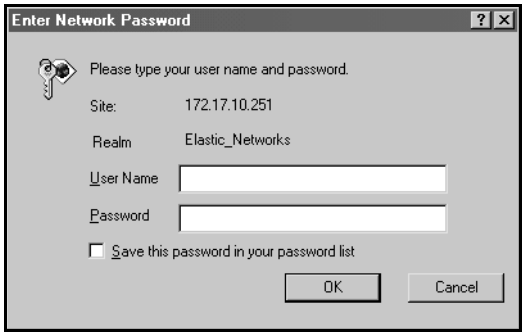
Step	Action

At this point, you have access to the **Administration** and **StormTracker-Site Manager** software groups. If you close your browser and later try to return to the **Administration** or **StormTracker-Site Manager** software groups, a login dialog appears as shown in :

Web interface login user name and password default

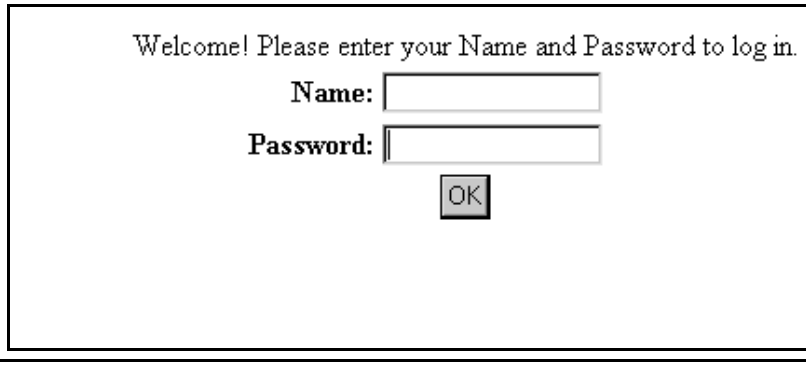
The default-configured user name/password login for all BitStorm Server software groups is **manager**/**manager**.

Figure 4-8
Administration and StormTracker-Site Manager Login dialog



6 To access the YesWare group, click the *Home* module button and select the **YesWare** link on the Home page. The YesWare login dialog appears as shown in Figure 4-9.

Figure 4-9
YesWare Login dialog



STOP

You have completed this task.

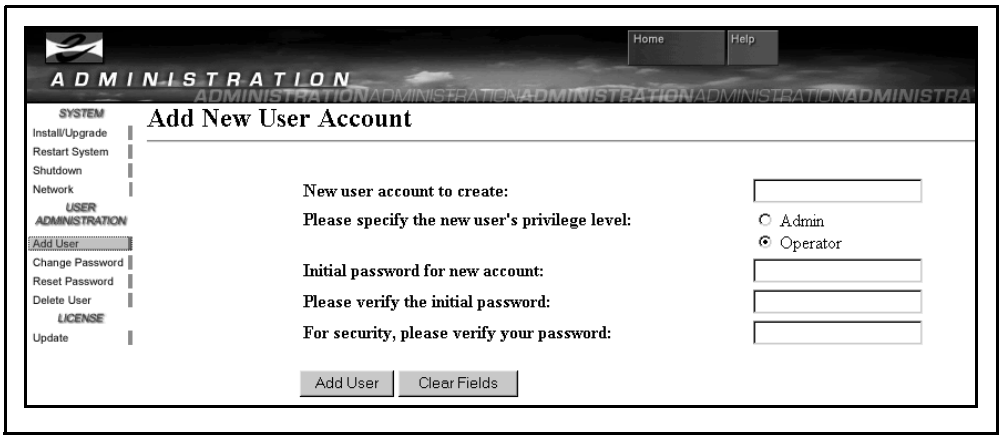
Procedure 4-2
Setting up system users and passwords

Use this procedure to create users and change/add passwords for the system.

Action

Step	Action
1	Using a PC web browser, browse to the IP address configured for the **ETH 0** interface, and login to the **Administration** software group.
2	Use the operations in the **User Administration** function add users and change passwords as required by your system. Figure 4-11 shows an example of the "Add New User Account" dialog. ***Note:*** Use the Change Password operation to change the manager/manager login/password immediately after the first use of the system. The Reset Password operation is used to change the passwords of other users in the system.

Figure 4-10
Add New User Account dialog



Step	Action
3	Record the user account information according to local office procedures.

STOP

You have completed this task.

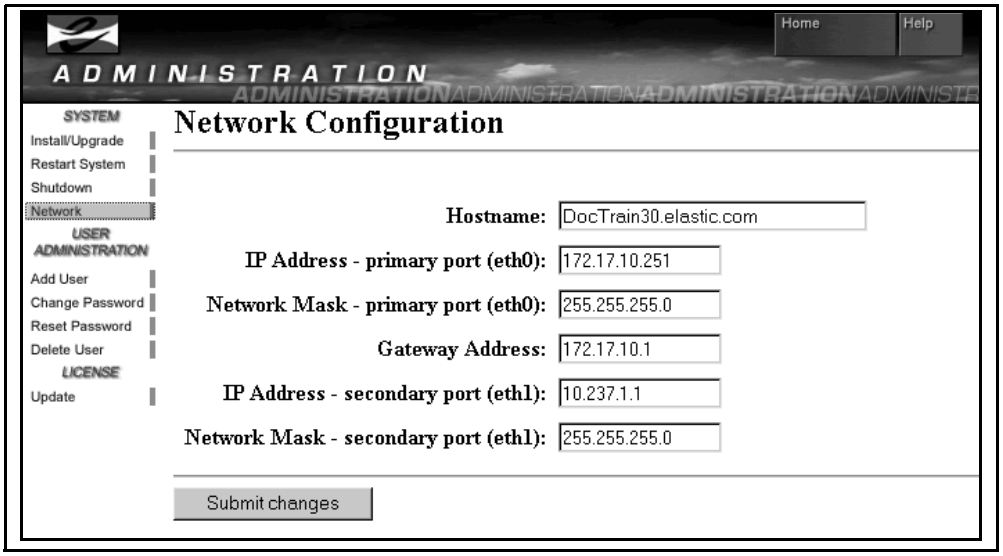
Procedure 4-3
Verifying the server network connection

Use this procedure to verify the **ETH 0** and **ETH 1** network settings to serve a VBN system.

Action

Step	Action
1	Using a PC web browser, browse to the IP address configured for the **ETH 0** interface, and login to the **Administration** software group.
2	Select the Network operation from the **System** function to launch the "Network Configuration" dialog. Figure 4-11 shows an example of this dialog.

Figure 4-11
Network Configuration dialog



3	Verify the **ETH 0** network settings and modify the **ETH 1** settings as necessary. ***Note:*** Only modify the **ETH 0** settings if instructed to do so by the LAN administrator.
4	Record the values in the "Network Configuration" dialog according to local office procedures. These values will be needed for some of the provisioning tasks performed later.

STOP

You have completed this task.

Using the *Database* Module

This chapter presents the procedures for using the *Database* module to manage the EtherLoop modem database.

Chapter Topic

This chapter includes the following topics.

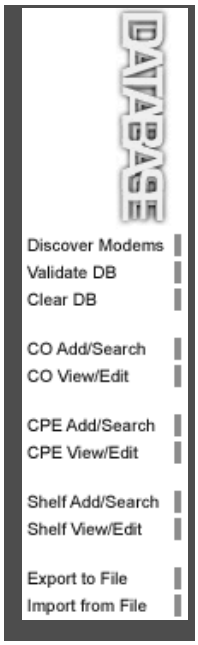
Topic	See
Database module operations	page 5-2
Provisioning the EtherLoop modem database	page 5-3

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
5-1	Provisioning EtherLoop modems	page 5-5
5-2	Exporting and importing EtherLoop modem databases	page 5-8

Database module operations



The *Database* module contains the operations used to create and manage the EtherLoop modem database**.** Table 5-1 summarizes the purpose of these operations in the *Database* module.

Table 5-1
Servers and Proxies module functions

Function name	Operation purpose
Discover Modems	This operation is used to automatically detect all EtherLoop modems in the BitStorm Server system.
Validate DB	This operation is used to verify that all EtherLoop CPE modems in the BitStorm Server system have valid information in the database (no duplicate locations or CO modem ports, etc.).
Clear DB	This operation is used to clear all EtherLoop modem information in the BitStorm Server system database.
CO Add/Search	This operation is used to manually add EtherLoop CO modems to the database and to search for previously provisioned CO modems.
CO View/Edit	This operation is used to view all CO modem information in the database and to manually provision/edit site-specific information.
CPE Add/Search	This operation is used to manually add EtherLoop CPE modems to the database and to search for previously provisioned CPE modems.
CPE View/Edit	This operation is used to view all CPE modem information in the database and to manually provision/edit site-specific information.
Shelf Add/Search	This operation is used to provision the IP addresses of manageable EtherLoop modem shelves and to search for previously provisioned shelves.
Shelf View/Edit	This operation is used to view the provisioned EtherLoop modem shelves and to edit the shelf information.
Export to File	This operation is used to export the EtherLoop database to a comma-separated value (CSV) file.
Import from File	This operation is used to import the EtherLoop database from a previously exported CSV database file.

Provisioning the EtherLoop modem database

The process of provisioning the EtherLoop modem database can be divided into the following major tasks:

- Configure the Modex Daemon interface
- Provision managed shelves (if any)
- Discover EtherLoop CO and CPE modems
- Manually provision any required site-specific information.

The following sections and procedure describe the requirements for performing each of these tasks.

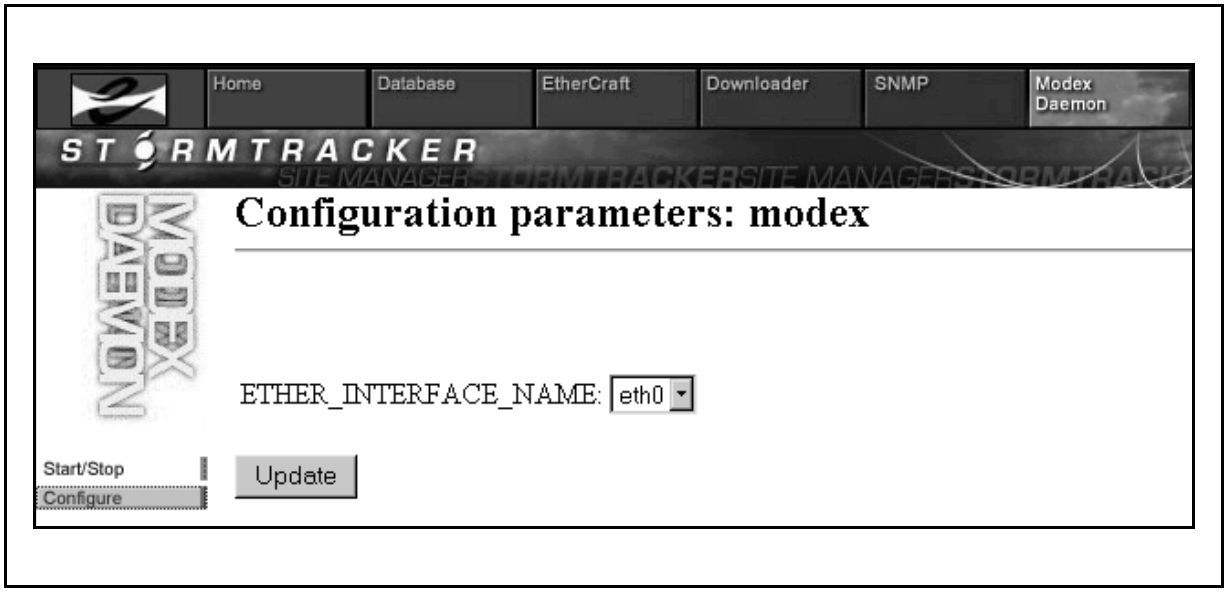
Modex Daemon ETH 0 / ETH 1 interface configuration

The Modex Daemon can process EtherLoop modem commands and requests over either the **ETH 0** or the **ETH 1** interface (not both). In a YesWare-VBN system, the Modex Daemon directs the processes over the **ETH 1** interface. In a StormTracker-Site Manager OAM&P system, the Modex daemon directs the processes over the **ETH 0** interface.

The *Modex Daemon* Configure operation contains a pull-down menu to change the daemon setting to either ETH 0 or ETH 1.

Figure 5-1 shows the "Configuration parameters: modex" dialog launched by clicking the Configure operation link.

Figure 5-1
Modex Daemon configuration dialog



Unmanaged vs. managed modem shelves

"Unmanaged" shelves contain a "passive" or unprovisioned card in the processor slot that simply passes EtherLoop traffic between the modem cards and the BitStorm Server. To use the automated Discover Modems operation, an unmanaged shelf must reside on the same LAN segment as the BitStorm Server interface (ETH 0 or ETH 1). No shelf provisioning is required.

"Managed" EtherLoop modem shelves are components such as the BitStorm™ MIU processor card in the BitStorm 1900 IP DSLAM and the MicroBurst™ mini-IP DSLAM that contain interfaces that can be managed remotely (over a WAN) using the StormTracker-Site Manager software. EtherLoop modems in managed shelves can be discovered using the Discover Modems operation regardless of where the modem shelf resides, as long as the shelf is on a reachable TCP/IP network.

Provisioning managed shelves

To provision a managed shelf, the following is required:

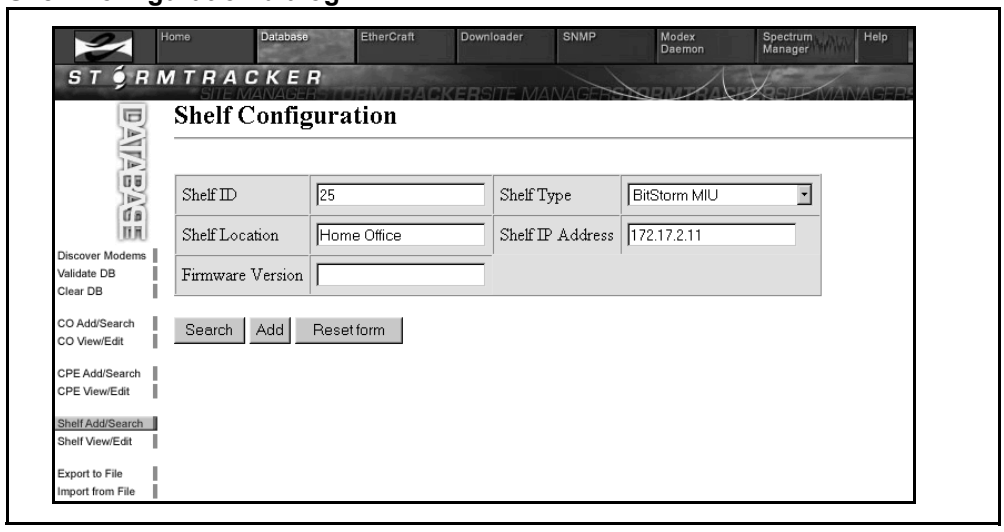
- The modem shelf interface (BitStorm MIU or MicroBurst shelf) must be configured with an IP address on a network that is reachable over a LAN or WAN from the BitStorm Server ETH 0.
- The shelf IP address must be provisioned using the Shelf Add/Search operation in the *Database* module.

Once these two tasks are complete, the Discover Modems operation can be used to automatically detect all EtherLoop CO and CPE modems within the "domain" of the modem shelf interface. All CO and CPE modems in managed shelves will appear in the **StormTracker-Site Manager** software modules such as EtherCraft in a [MAC Address]@[Shelf IP address] format as in the following example:

00:30:52:01:AF:C6@172.17.2.11

Figure 5-2 shows the "Shelf Configuration" dialog launched by clicking the Shelf Add/Search operation link.

Figure 5-2
Shelf Configuration dialog



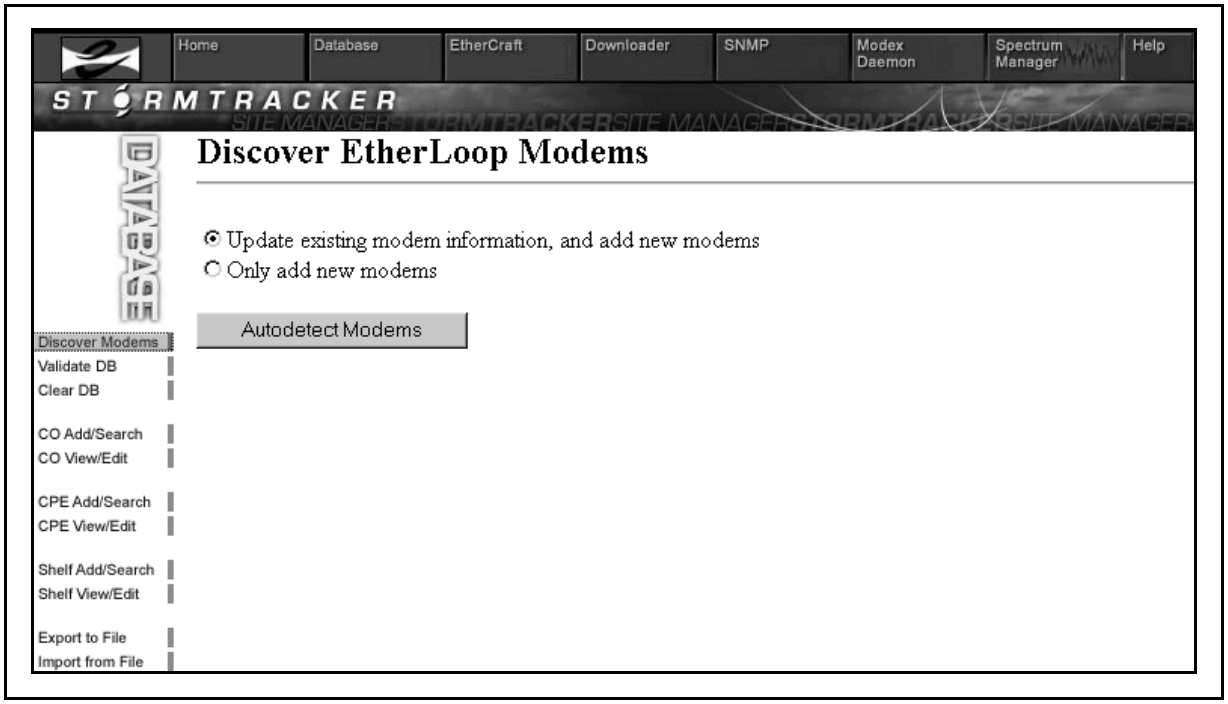
Procedure 5-1
Provisioning EtherLoop modems

Use this procedure to provision any EtherLoop modems installed on the system. This procedure must be done to before using YesWare to provision EtherLoop CO modems as switches.

Action

Step	Action
1	Using a PC web browser, browse to the IP address configured for the **ETH 0** interface, and login to the StormTracker-Site Manager software group.
2	In the Modex Daemon module, configure the Modex daemon interface according to the system application as described in “Modex Daemon ETH 0 / ETH 1 interface configuration” on page 5-3.
3	Use the Shelf Add/Search operation in the *Database* module to provision any managed modem shelves in the system as described in “Provisioning managed shelves” on page 5-4.
4	Select the Discover Modems operation from the *Database* module to launch the "Discover EtherLoop Modems" dialog as shown in Figure 5-3.

Figure 5-3
Discover EtherLoop Modems dialog

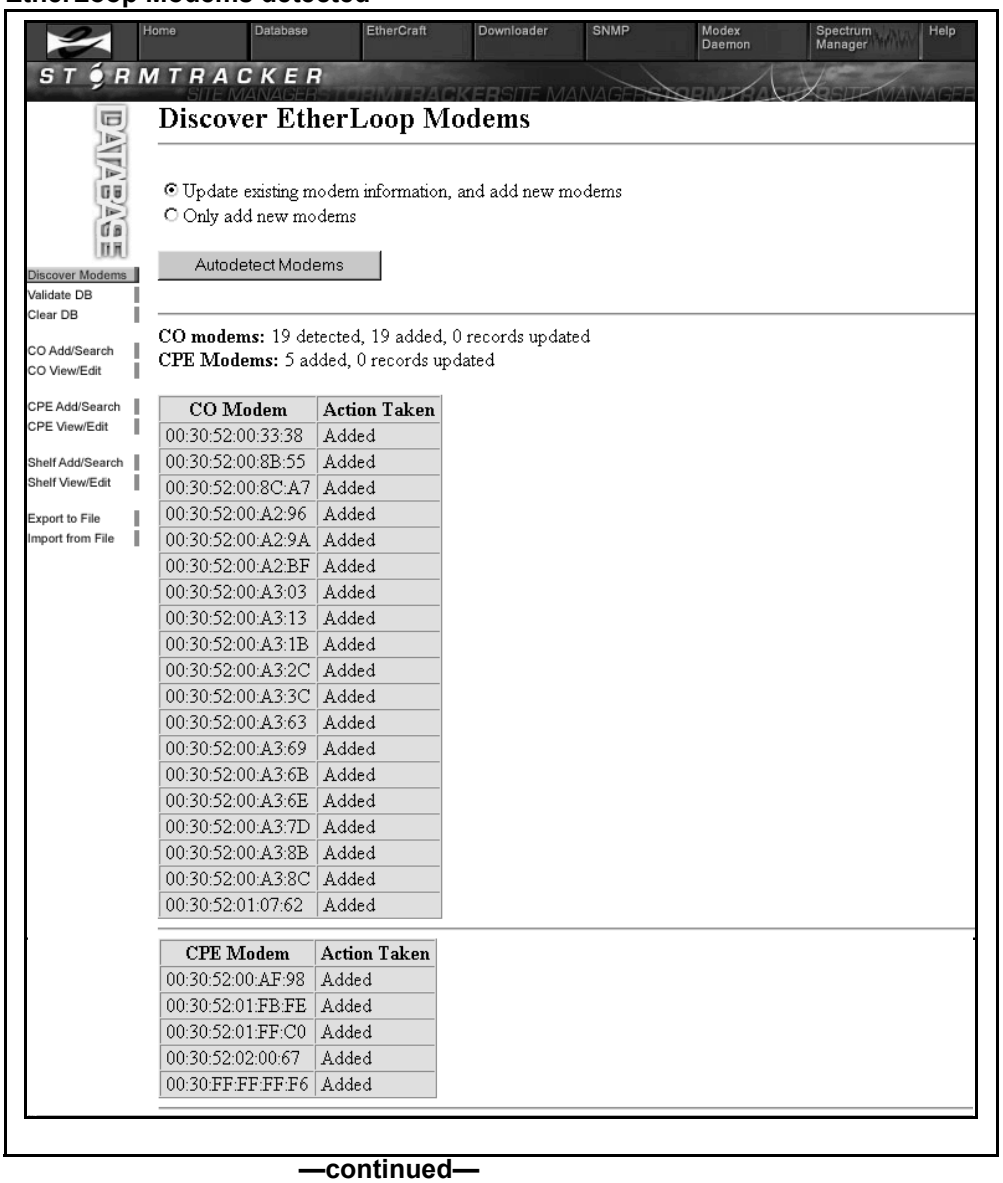


—continued—

Procedure 5-1 (continued)
Provisioning EtherLoop modems

Step	Action
5	Select the desired option (detect new modems and update modem information, or only detect new modems).
6	Click the "AutoDetect Modems" button. Figure 5-4 shows an example of the completed operation.

Figure 5-4
EtherLoop Modems detected

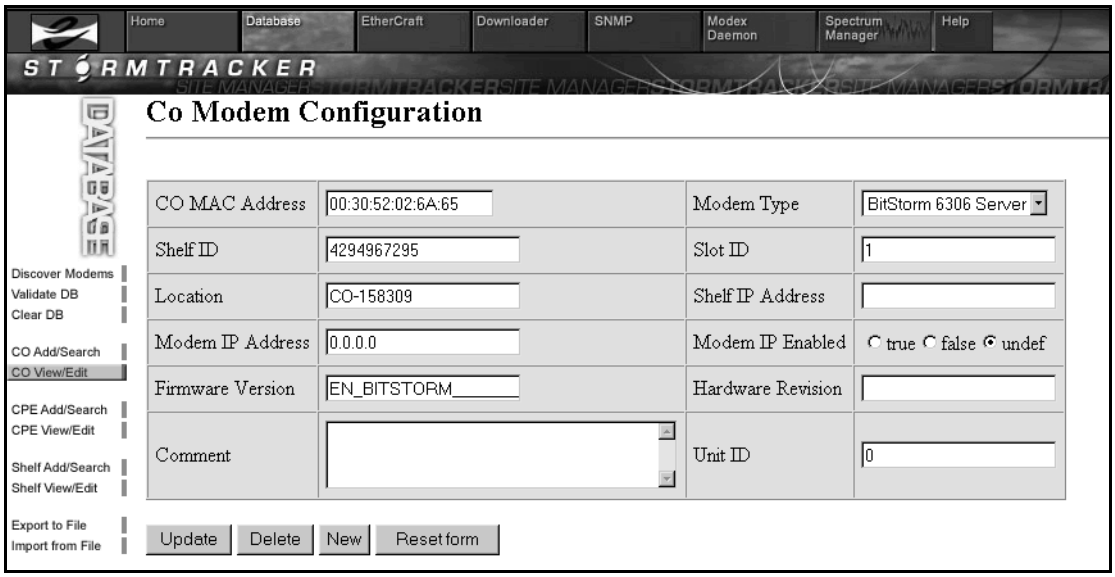


—continued—

Procedure 5-1 (continued)\
Provisioning EtherLoop modems

Step	Action
7	Use the CO and CPE add/search operations to manually provision any required site-specific modem parameters. Figure 5-5 shows an example of the "CO Modem Configuration" dialog. This dialog is launched by clicking either the **edit** link in the CO Modem View/Edit operation dialog or the CO Modem Add/Search operation link.

Figure 5-5
CO Modem Configuration dialog



STOP

You have completed this task.

Procedure 5-2
Exporting and importing EtherLoop modem databases

This procedure describes how to use the Export to File and Import from File operations to export and import an EtherLoop modem database.

Using the *Database* / Export to File function

The *Database* / Export to File function exports provisioned database data from the CO/CPE modem database to a file. You must export and download the data to a file on a workstation to import it into the database of a Site Manager. The downloaded file is a comma-separated-value file that can be edited using an Excel or compatible spreadsheet.

> ***Editing data in an exported modem database***
> Row data such as IP address, shelf, and slot can be modified, and rows (i.e. modems) can be added, **but do not change table names, column names, or column positions**. Save the modified file in comma-separated-value format if you will be importing it back into a **StormTracker-Site Manager** database.

Using the *Database* / Import from File function

Imported data is merged into the existing database. To completely replace the contents of the database with the imported data, first erase the database via the 'Clear DB' *Database* operation, then reselect 'Import from File'.

Only import a file that was exported using the 'Export to File operation. If you edit the exported file, be sure to save it as a text file in comma-separated-value (.csv) or tab-separated-value (.tsv or .txt) format.

—continued—

Procedure 5-2 (continued)
Exporting and importing EtherLoop modem databases

Action

Step	Action
	Exporting the modem database
1	Browse to the IP address of the BitStorm Server containing the desired EtherLoop CO/CPE modem database.
2	Select the **StormTracker-Site Manager** software group and *Database* from the **StormTracker-Site Manager** module menu.
3	Select the Export to file function, and click on the "**Retrieve the exported database"** link. ***Note:*** To view the exported data, left-click on the link. (If a dialog box appears with the options 'Open...' and 'Save...', select 'Open' to view, or 'Save' to download).
4	To download the exported file, right-click on the "**Retrieve the exported database"** and select the 'Save to target...' menu item. Save the file to a desired location on your workstation or network.
	Importing the modem database
5	Browse to the IP address of the BitStorm Server controlling the system.
6	Select the **StormTracker-Site Manager** software group and *Database* from the **StormTracker-Site Manager** module menu.
7	Select the Import from File function, and enter or browse to the file containing the exported database.
8	Select the "Import and Provision" or "Import Only" button, depending on your requirements. ***Import from File / Import and Provision vs. Import Only*** Click 'Import and Provision' to automatically provision modems with the imported IP address, shelf and slot. Click 'Import Only' to import CO/CPE modem database without provisioning the modems on the Site Manager. The 'Import Only' option is useful if you need to make changes to the database (such as changing/adding IP addresses) before provisioning the modems into the system Site Manager database. **If the function is executed, the system displays "File has been imported successfully."**

STOP

You have completed this task.

Using *EtherCraft*

This chapter describes the features and capabilities of the *EtherCraft* module. *EtherCraft* is a diagnostics and performance monitoring tool for monitoring EtherLoop modem status and performance. *EtherCraft* can examine all modems or selected modems that have been provisioned using the *Database* module. EtherCraft can only be used after the EtherLoop modem database has been provisioned.

Chapter Contents

This chapter includes the following information.

Topic	See
EtherCraft OAM&P features	page 6-2
Modem management	page 6-4
Log Management	page 6-16
Privacy Management	page 6-18
CO modem port management	page 6-19
CPE modem port management	page 6-20

EtherCraft OAM&P features

The Site Manager *EtherCraft* module supports the following EtherLoop modem OAM&P features:

- modem monitoring and performance management
- communications privacy management
- modem activity log management

The following sections contain a brief overview of these features. The remainder of this chapter details the operation and use of the functions contained in these features.

EtherLoop modem monitoring and performance management

EtherCraft's Modem Status operation provides the ability to perform a variety of modem monitoring activities, including:

- Check modem speeds
- Display comprehensive tables showing modem performance including modems speeds, training counts, retraining, Ethernet metrics, and HDLC metrics
- View modem firmware version information
- Clear or get modem logs
- Display lists of currently active modems
- Reset modems

"Modem management" on page 6-4 describes the operation and use of the Modem Status operation. Table 6-1 lists the sections in this chapter describing each of the Modem Status operation dialogs.

Table 6-1
Modem Mgmt function descriptions

Modem Status function	**See**
Check Speeds	page 6-7
Modem Details	page 6-8
Client Addresses	page 6-12
Status	page 6-13
Version	page 6-14
Reset Modems	page 6-15

View Logs

EtherCraft's View Logs operation provides the ability to view, download or delete the entries to the folowing EtherLoop logs:

- IPBOA ("legacy" name for current Modem Details logs)
- Client Address
- Status
- Version

Log files are stored/downloaded in a comma-separated value (*.csv) file format. Upon retrieval, the log files are automatically converted into a Microsoft *Excel* file that can be saved on the local workstation or network.

"Log Management" on page 6-16 describes the operation and use of the Log Mgmt feature.

Privacy Mgmt

EtherCraft's Privacy Mgmt operation provides the ability to secure communications between EtherLoop modems using each individual EtherLoop modem's MAC filtering capability. EtherLoop MAC filtering ensures that a particular client cannot see traffic destined for other clients.

EtherLoop MAC filters prevent or allow communications based on the MAC addresses provisioned in a modem's Filter table. If MAC addresses are provisioned in Privacy Mgmt for a CPE/CE modem, traffic from all other clients on the EtherLoop system are prevented from appearing at the CPE/CE modem. In addition, only registered hosts connected to the CPE/CE modem can use the connection.

"Privacy Management" on page 6-18 describes the operation and use of the Privacy Mgmt feature.

Modem management

The first step in using EtherCraft is to select the modem(s) to monitor. EtherCraft provides the following modem selection capabilities:

- Time delay entry, to specify the time delay to refresh data a specified number of seconds.
- Monitoring of all EtherLoop modems
- Monitoring selected modems using choices from lists of Client and Server modems
- Specification of the delay time between modem queries

EtherLoop modem speeds and training counts

EtherCraft presents EtherLoop modem speedsusing tables that contain codes representing 24 possible modem speed levels (0-23). Modem training counts are calculated at each speed and the results of the training counts are shown using a code (seeTable 6-3 on page 6-6). For example, if a modem is trained at a speed of 2857 Kbps (Speed Code 17) and the speed is found to be acceptable, a training Code of 10 is displayed to indicate the results of the training.

Note: With this release, only speeds 0-19 are available.

EtherCraft speeds tables

Table 6-2 on page 6-5 lists the modem speed codes and the estimated throughput for the corresponding QAM16 and QPSK speed values.

Table 6-2
Estimated throughput at different modem speeds

Modem Speed Code	ksps	Modulation	kbps
0	62.50	QPSK	125
1	89.29	QPSK	178
2	125.00	QPSK	250
3	62.50	16 QAM	250
4	178.57	QPSK	357
5	89.29	16 QAM	357
6	250.00	QPSK	500
7	125.00	16 QAM	500
8	357.14	QPSK	714
9	178.57	16 QAM	714
10	500.00	QPSK	1000
11	250.00	16 QAM	1000
12	714.29	QPSK	1428
13	357.14	16 QAM	1428
14	833.33	QPSK	1666
15	1000	QPSK	2000
16	500.00	16 QAM	2000
17	714.29	16 QAM	2857
18	833.33	16 QAM	3333
19	1000	16 QAM	4000

Modem training counts

Table 6-3 on page 6-6 lists the modem training counts and the meaning of each code.

Table 6-3
Check Speed training count interpretation

Code	Description
15	Modem has been trained, speed has been used and the LQF is > or = 98%
11 thru14	Modem has been trained, speed has a high LQF but has burned off at least once.
10	Modem has been trained, the speed has not been used, or the modem has used the speed and the LQF is between 85-98%
1 thru 9	Modem has been trained, but burned off at least once because of LQF or SNR problems
0	Modem has not been trained, or once modem was trained was burned off because of poor LQR or SNR
-1 thru -5	Modem has failed to this this many times. The modem will not attempt to retrain a speed with a -5 or -3 training count. Once per hour the modem will set all untrained speeds to -4 to allow another training attempt for that speed.
-6	Modem has been marked as untrainable because the firmware determined the apparent distance between modems was too long to support this speed
-7	Modem has been marked as unusable.
-10	Modem is currently being trained
NA	Modem was unavailable to determine its training count at that particular speed

Check Speeds

Use this operation to check the transmit speeds of selected client or server modems. You can display the following values for training results based on training at different speeds.

- Type of modem—client or server modem.
- Speeds—shown using codes to represent QAM16 and QPSK values
- Mac address for the modem along with its training counts—training counts are interpreted using codes to indicate the results of training at different speeds

Access this function from the EtherCraft page by clicking the **Check Speeds** button. Figure 6-1 shows the **Check Speeds** page.

Figure 6-1
EtherCraft Check Speeds page

Server Modem Receive Training Counts

Speeds	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Current TX Speed	Current RX Speed	Theoretical Maximum Throughput
003052000007_0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0
003052000007_1	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000
003052000007_2	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000
003052000007_3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0
003052000007_4	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	15	-6	10	15	-6	-6	21	21	4000
003052000007_5	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000
003052000007_6	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000
003052000007_7	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000
003052000007_8	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000
003052000007_9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0
003052000007_10	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000
003052000007_11	-6	10	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6	21	21	4000

Client Modem Receive Training Counts

Speeds	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Current TX Speed	Current RX Speed	Theoretical Maximum Throughput
0030520015CD	0	0	0	0	0	0	10	0	0	-1	-3	10	10	10	10	10	10	0	10	0	10	10	0	0	21	21	4000

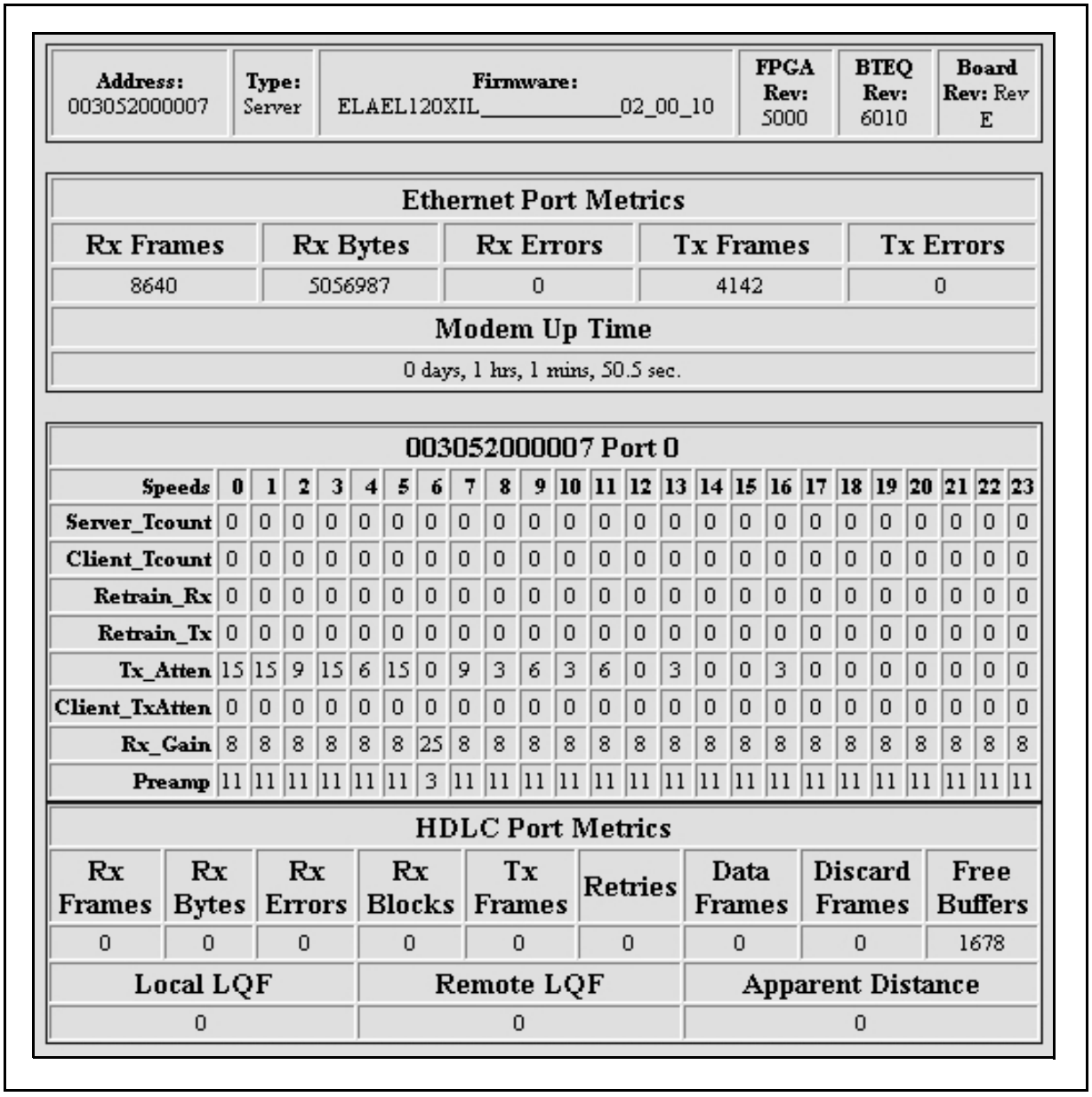
Modem Details

The Modem Details function of *EtherCraft* displays comprehensive modem data. Figure 6-2 shows an example of the *EtherCraft* Modem Details page.

Note: The Modem Details function was formerly called IP BOA

The following sections present a detailed look at the information available on the Modem Details page.

Figure 6-2
***EtherCraft* / Modem Details**



Address:	Type:	Firmware:	FPGA Rev:	BTEQ Rev:	Board Rev:
003052000007	Server	ELAEL120XIL_____02_00_10	5000	6010	Rev E

Ethernet Port Metrics				
Rx Frames	Rx Bytes	Rx Errors	Tx Frames	Tx Errors
8640	5056987	0	4142	0

Modem Up Time
0 days, 1 hrs, 1 mins, 50.5 sec.

003052000007 Port 0

Speeds	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Server_Tcount	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Client_Tcount	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retrain_Rx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retrain_Tx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tx_Atten	15	15	9	15	6	15	0	9	3	6	3	6	0	3	0	0	3	0	0	0	0	0	0	0
Client_TxAtten	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rx_Gain	8	8	8	8	8	8	25	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Preamp	11	11	11	11	11	11	3	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11

HDLC Port Metrics								
Rx Frames	Rx Bytes	Rx Errors	Rx Blocks	Tx Frames	Retries	Data Frames	Discard Frames	Free Buffers
0	0	0	0	0	0	0	0	1678

Local LQF	Remote LQF	Apparent Distance
0	0	0

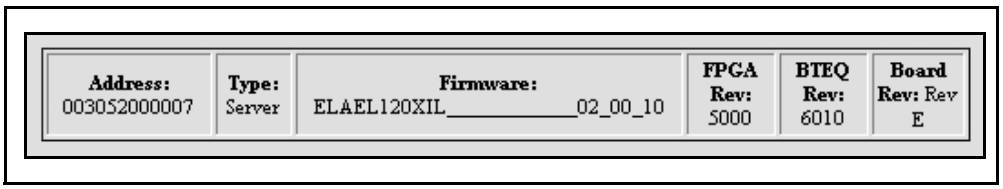
Modem identification and version table

The modem identification and version table (first table on the Modem Details page) shows the following identification and version information for each modem selected:

- MAC address of modem
- Type of modem—client or server
- Firmware version installed on modem
- Revision number of modem board
- Revision number of modem analog board

Figure 6-3 shows an example of the identification and version section.

Figure 6-3
Modem identification and version



Address:	Type:	Firmware:	FPGA Rev:	BTEQ Rev:	Board Rev:
003052000007	Server	ELAEL120XIL_____02_00_10	5000	6010	Rev E

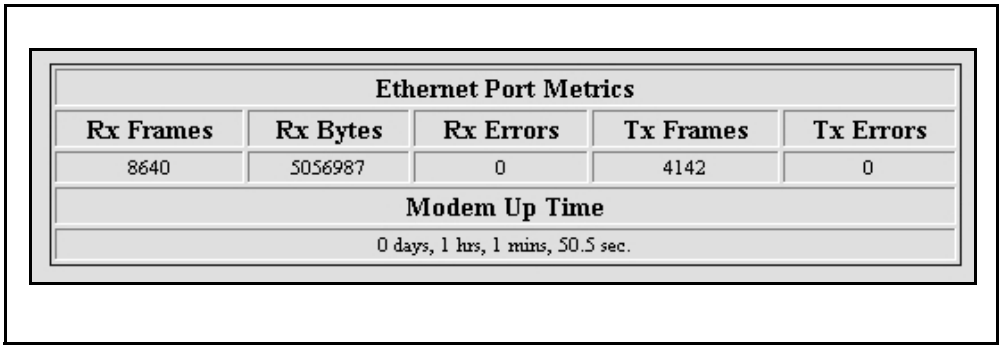
Ethernet Port Metrics

The **Ethernet Port Metrics** table (second table on the Modem Details page) includes a measurement of the following on the Ethernet side of modem communications:

- RX Frames - number of frames (or packets) received
- RX Bytes - amount of data received in bytes
- RX Errors - number of receive errors
- TX Frames - number of frames transmitted
- TX Errors - number of transmit errors
- Modem Up Time - amount of time the modem has been running since the last power-up or reset.

Figure 6-3 shows an example of the **Ethernet Port Metrics table**:

Figure 6-4
Ethernet Port Metrics table



Ethernet Port Metrics				
Rx Frames	Rx Bytes	Rx Errors	Tx Frames	Tx Errors
8640	5056987	0	4142	0
Modem Up Time				
0 days, 1 hrs, 1 mins, 50.5 sec.				

Speeds tables, modem speeds and training counts

Speeds tables follow the Ethernet Port Metrics table, and present values for these transmit and receive parameters:

- Server _Tcount—Transmit speed of CO/SE modems
- Client_Tcount—Transmit speed of CPE/CE modems
- Retrain_RX—Receive retrain count; value is '-' if run on CPE/CE modem
- Retrain_TX—Transmit retrain count; value is '-' if run on CPE/CE modem
- Tx_Atten - Attenuation in dB from the maximum transmit output power on the CO/SE modem
- Client_TxAtten -Attenuation in dB from the maximum transmit output power on the CPE/CE modem
- Rx_Gain - Gain in dB the modem had to apply to the receive channel in order to hear the far end modem
- Preamp - ain in one of four coarse settings (3, 11, 19, 27dB) applied to the receive channel to enable it to hear the far end modem

A speeds table is displayed for each modem port. For example, *EtherCraft* displays 12 speeds tables for ELMo 120 modems, numbered Port 0-Port 11. Figure 6-5 shows an example of a speed table for Port 6 of an ELMo 120 modem.

Figure 6-5
Speeds table example

003052000007 Port 6

Speeds	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Server_Tcount	-6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6
Client_Tcount	-6	10	10	10	-4	10	10	10	10	10	10	10	10	10	10	10	10	-6	10	-6	15	15	-6	-6
Retrain_Rx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Retrain_Tx	0	1	2	0	3	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Tx_Atten	15	30	30	27	30	30	30	30	30	30	30	30	30	30	30	30	30	0	30	0	30	30	0	0
Client_TxAtten	0	16	18	14	18	16	18	18	18	18	18	18	18	18	18	18	18	0	18	0	18	18	0	0
Rx_Gain	8	1	2	0	2	1	2	2	1	2	2	2	1	1	0	0	0	8	0	8	0	0	8	8
Preamp	11	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	11	3	11	3	3	11	11

HDLC Port Metrics

An **HDLC Metrics** table is associated with each speeds table displayed for the modem port. **HDLC Metrics** include a measurement on the side of the phone link between modems. The **HDLC Metrics** table displays the following:

- RX Frames—number of frames (or packets) received
- RX Bytes—amount of data received in bytes
- RX Errors—number of receive errors
- RX Blocks - number of blocks received
- TX Frames—the number of frames transmitted
- Retries - number of re-transmission attempts
- Data Frames - number of data frames transmitted
- Discard Frames - number of HDLC discard frames
- Free Buffers - available storage for data to compensate for differences in transmission speeds or timing
- Local LQF - local line quality factor on a scale of 100
- Remote LQF - remote line quality factor on a scale of 100
- Apparent Distance - estimate of distance between server (CO/SE) and client (CPE/CE) modem to the nearest 1000 feet (displayed in Kft)

Figure 6-6 shows an example of an **HDLC Metrics** table.

Figure 6-6
HDLC Port Metrics table example

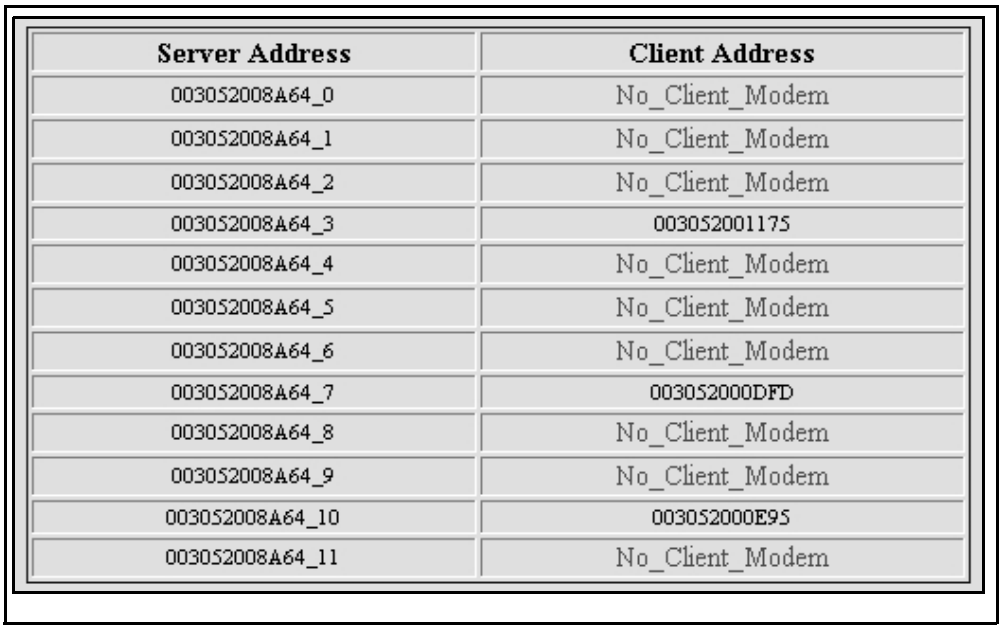
HDLC Port Metrics								
Rx Frames	Rx Bytes	Rx Errors	Rx Blocks	Tx Frames	Retries	Data Frames	Discard Frames	Free Buffers
112284	2320314	11	0	111559	0	0	0	1889
Local LQF			Remote LQF			Apparent Distance		
0			0			0		

Client Addresses

Use this function to display the MAC addresses of clients that correspond to selected server modems. The addresses are displayed in columns by type of modem. If no client modem is assigned, the system displays "No_Client_Modem."

Access this function from the EtherCraft page by clicking the Client Addresses button. Figure 6-7 shows the **Client Addresses** page.

Figure 6-7
EtherCraft Client Addresses page



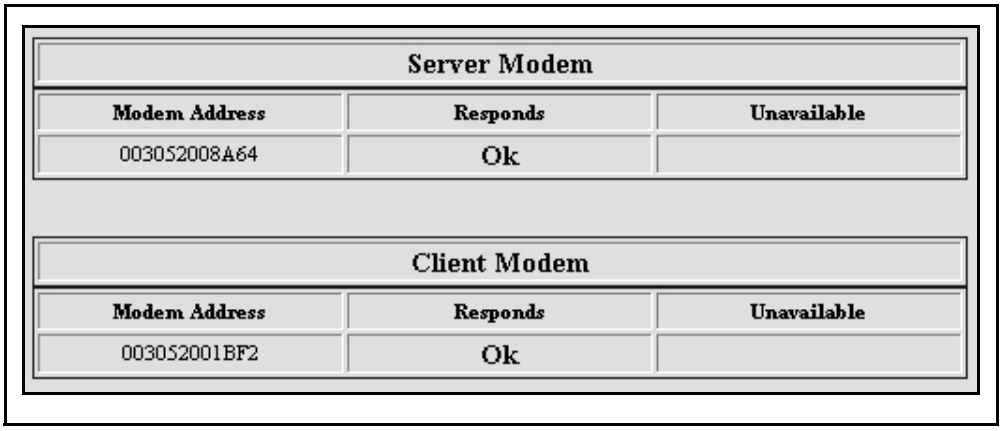
Server Address	Client Address
003052008A64_0	No_Client_Modem
003052008A64_1	No_Client_Modem
003052008A64_2	No_Client_Modem
003052008A64_3	003052001175
003052008A64_4	No_Client_Modem
003052008A64_5	No_Client_Modem
003052008A64_6	No_Client_Modem
003052008A64_7	003052000DFD
003052008A64_8	No_Client_Modem
003052008A64_9	No_Client_Modem
003052008A64_10	003052000E95
003052008A64_11	No_Client_Modem

Status

Use this function to test whether modems are responding or are unavailable. The modems are listed by MAC address. The status is either "Ok" in the **Responds** field or an "X" in the **Unavailable** field.

Access this function from the EtherCraft page by clicking the Status button. Figure 6-8 shows an example of the Status page.

Figure 6-8
***EtherCraft* Status page**



Server Modem		
Modem Address	**Responds**	**Unavailable**
003052008A64	Ok	

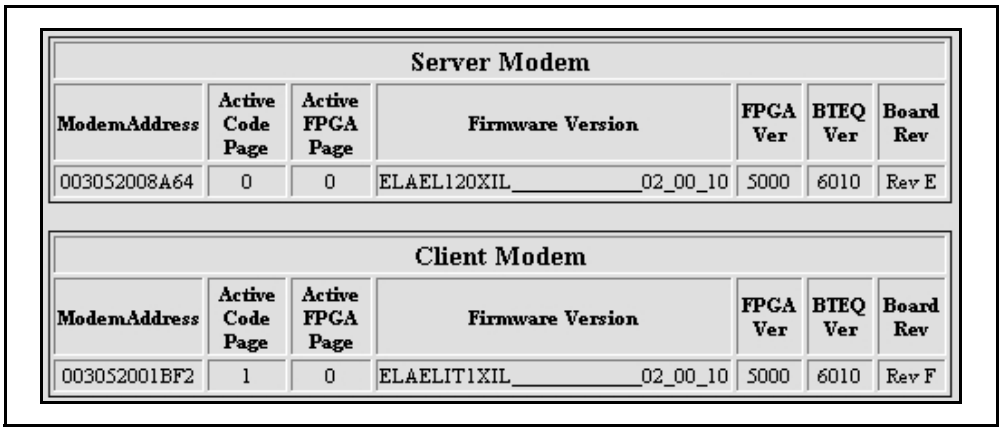
Client Modem		
Modem Address	**Responds**	**Unavailable**
003052001BF2	Ok	

Version

Use this function to retrieve firmware code page (memory location) and FPGA page information, current firmware version, and the modem printed circuit board (PCB) revision. The modems are listed by MAC address.

Access this function from the EtherCraft page by clicking the Status button. Figure 6-8 shows an example of the Status page.

Figure 6-9
***EtherCraft* Version page**



Server Modem

ModemAddress	Active Code Page	Active FPGA Page	Firmware Version	FPGA Ver	BTEQ Ver	Board Rev
003052008A64	0	0	ELAEL120XIL_____02_00_10	5000	6010	Rev E

Client Modem

ModemAddress	Active Code Page	Active FPGA Page	Firmware Version	FPGA Ver	BTEQ Ver	Board Rev
003052001BF2	1	0	ELAELIT1XIL_____02_00_10	5000	6010	Rev F

Purpose of the Version function

The EtherCraft Version screen is useful for modem support, testing, and administration., and provides a useful way track performance and troubleshoot modems as the hardware and firmware is enhanced.

The Version screen indicates the code page (memory location) that is active for the modem code page and FPGA (field programmable gate array) code page. FPGAs are programmable logic chips with a high density of gates that the modem uses in signal processing. In the modems, the value for the active code page is either 0 or 1. The code page swaps with each upgrade that is downloaded to the modem.

Version page field values

The version information includes the following values for each modem:

- Active Code Page—values are either 0 or 1 for the active memory location for the modem code
- Active FPGA Page—values are either 0 or 1 for the active memory location for the FPGA code
- Firmware Revision—current firmware version being used by the modem
- Board Revision—modem printed circuit board revision for the selected modem

Reset Modems

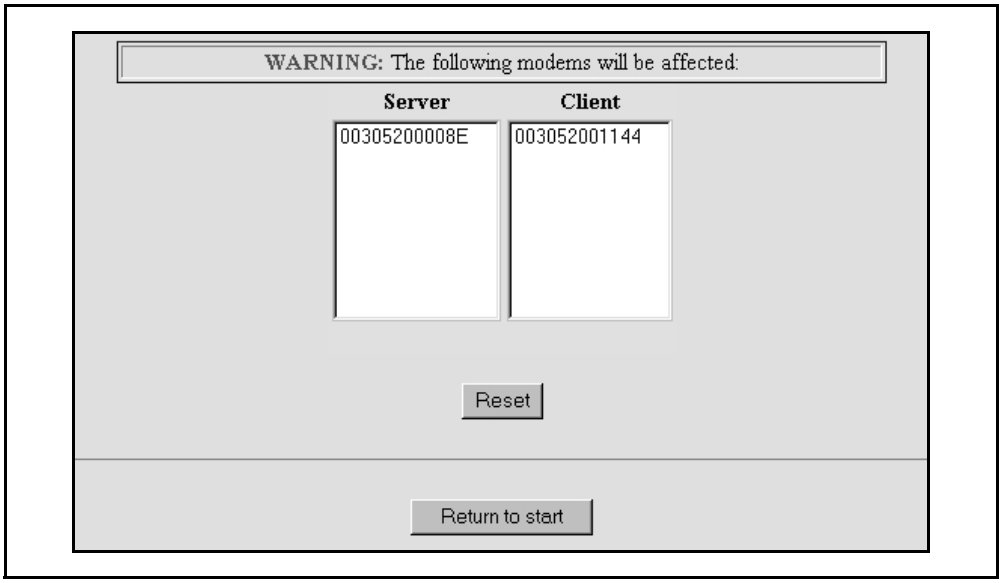
Use this function to reset selected modems. Resetting the modems clears current activity from the modem and restarts modem operation.

> ***CAUTION - Reset Modems causes loss of service***
> This procedure will cause temporary loss of service. Do only at low-traffic periods

Access this function from the EtherCraft page by clicking the Reset Modems button. On the Clear Logs page, click the logs you want to retrieve or click **Return to start** to clear your selections on the Get Logs page without retrieving the log files.

Figure 6-11 shows an example of the Reset Modems page.

Figure 6-10
***EtherCraft* Reset Modems page**



Log Management

Use this feature to download or delete selected EtherCraft logs. The Log Mgmt feature can retrieve or delete entries to the following logs:

- IPBOA ("legacy" name for current Modem Details function)
- Client Address
- Status
- Version

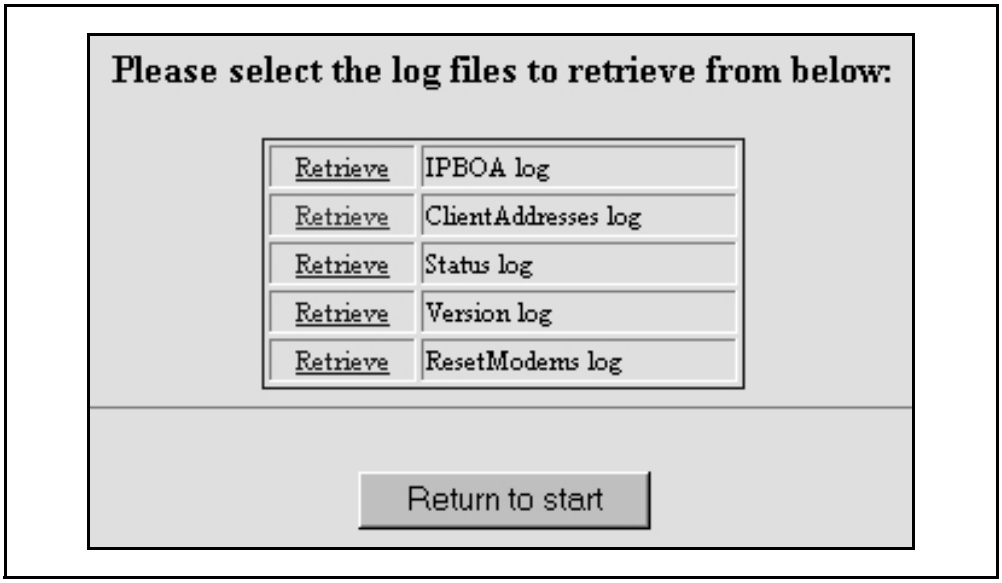
Log files are stored in a comma-separated value (*.csv) file format. Upon retrieval, the log files are automatically converted into a Microsoft *Excel* file that can be saved on the local workstation or network.

Using the Get Logs function

Access this function from the EtherCraft page by clicking the Get Logs button. On the log retrieval page, click the logs you want to retrieve or click **Return to start** to clear your selections on the Get Logs page without retrieving the log files.

Figure 6-11 shows an example of the Get Logs page.

Figure 6-11
***EtherCraft* Get Logs page**



Using the Clear Logs function

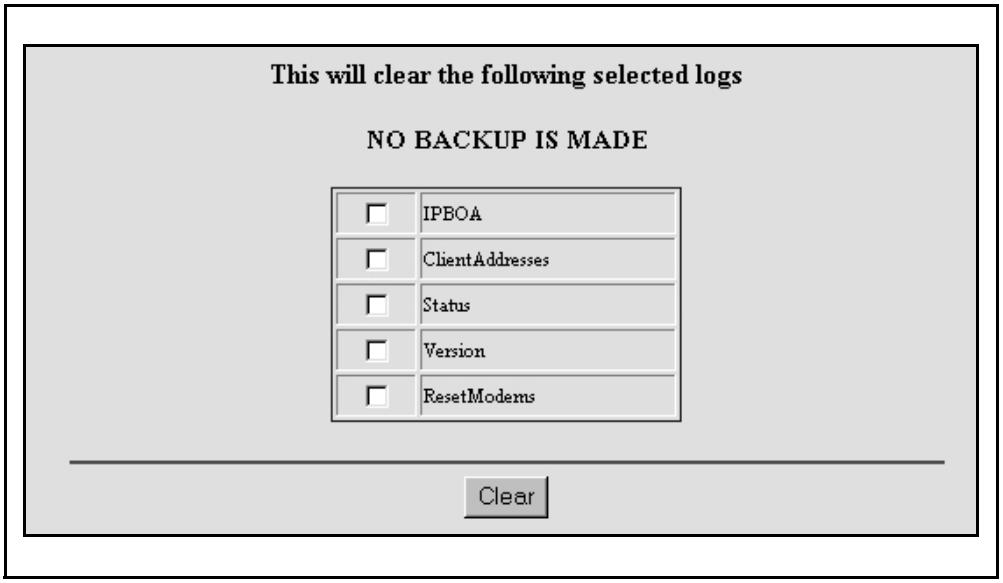
Use this function to clear selected EtherCraft logs.

CAUTION - Removing EtherCraft logs is permanent
When clearing EtherCraft logs no backup is made for the logs. By clearing the logs you remove entries permanently from the EtherCraft log files.

Access this function from the EtherCraft page by clicking the Clear Logs button. On the Clear Logs page, click the logs you want to remove or click **Return to start** to clear your selections on the Clear logs screen without clearing the log files.

Figure 6-12 shows an example of the Clear Logs page.

Figure 6-12
***EtherCraft* Clear Logs page**

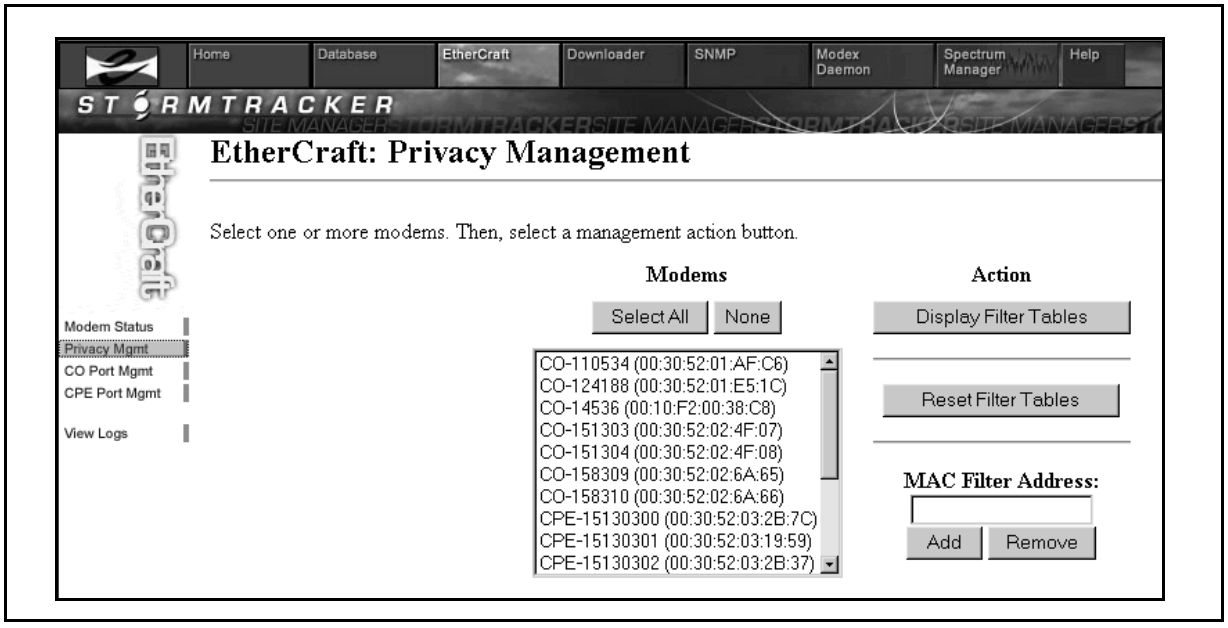


Privacy Management

Access this feature by clicking the *EtherCraft* Privacy Mgmt operation. This feature provides the ability to manage each individual EtherLoop modem's MAC filtering capability. An EtherLoop modem "privacy filter" is a MAC address entry stored in a modem that allows Ethernet traffic to and from only the gateway whose address matches the entry in the MAC filter table.

Figure 6-13 shows an example of the *EtherCraft* Privacy Mgmt page.

Figure 6-13
***EtherCraft* Privacy Mgmt page**



Using the Privacy Mgmt feature

Separate MAC filter tables exist for CO and CPE modems. If no MAC addresses appear in the MAC Filter table for a particular modem, it will pass all Ethernet traffic. If any MAC addresses appear in the MAC Filter table for a particular modem, the modem will only accept Ethernet packets from those addresses.

To add or remove a privacy filter, select the modem(s) to modify and do the following:

- Click **Display Filter Tables** to see the MAC address entries for the modems listed. The table appears at the bottom of the screen.
- Enter a MAC address in the **MAC Filter Address** field.
- Click the **Add** or **Remove** button to add or remove it from the Filter Table.

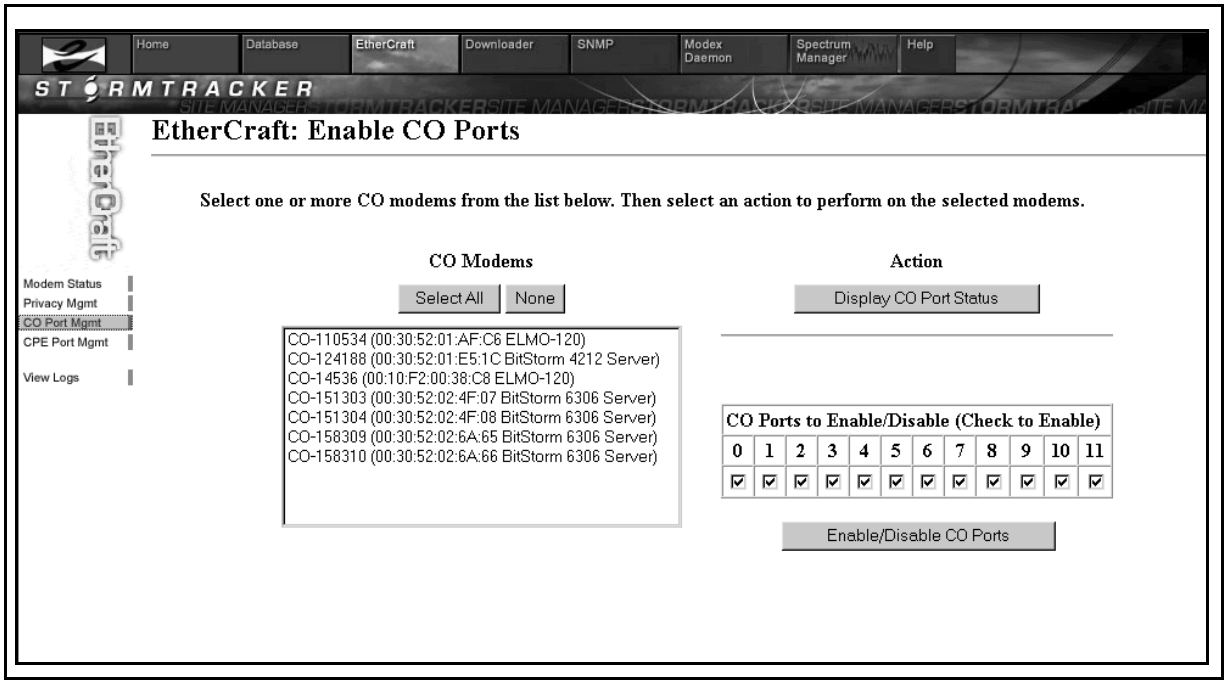
It is possible to store up to eight addresses per modem, allowing multiple gateways to be used. The **Reset Filter Tables** button returns the filter table to default settings.

CO modem port management

Access this feature by clicking the *EtherCraft* CO Port Mgmt operation. This feature provides the ability to enable or disable each individual port on the multiport CO modems.

Figure 6-14 shows an example of the *EtherCraft* CO Port Mgmt page.

Figure 6-14
***EtherCraft* CO Port Mgmt page**

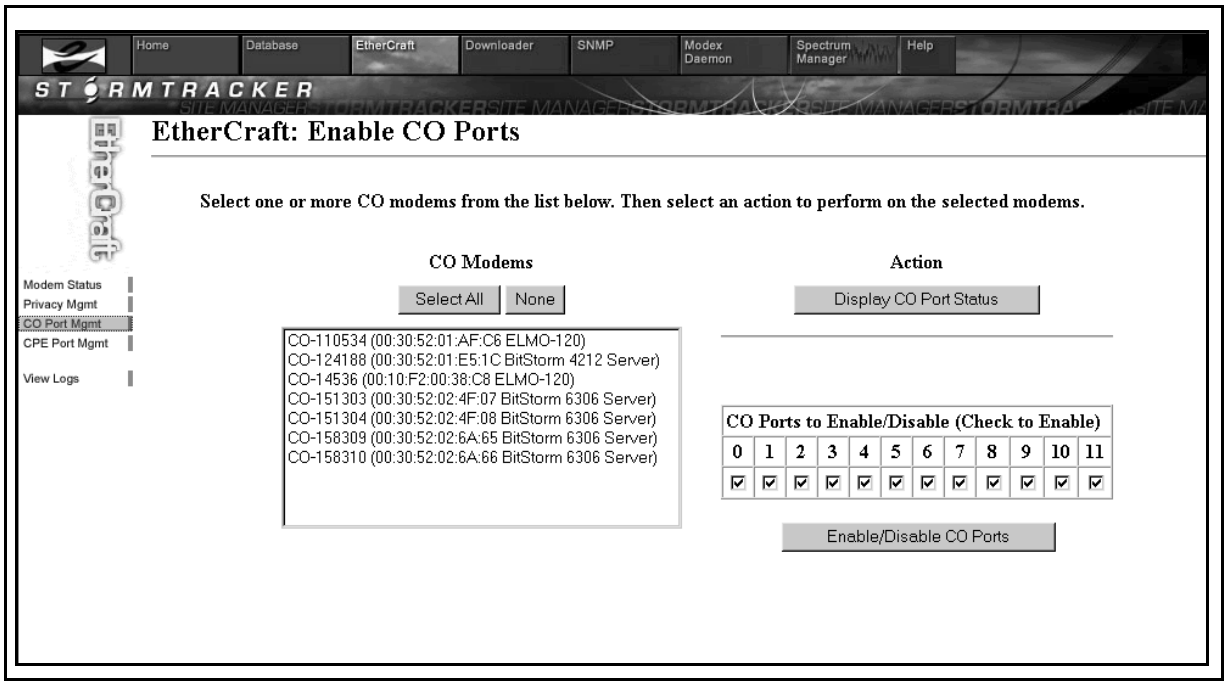


CPE modem port management

Access this feature by clicking the *EtherCraft* CPE Port Mgmt operation. This feature provides the ability to enable or disable each individual CPE modem.

Figure 6-15 shows an example of the *EtherCraft* CPE Port Mgmt page.

Figure 6-15
***EtherCraft* CPE Port Mgmt page**



Using the Downloader module

This chapter describes how to use the Downloader module.

Chapter Contents

This chapter includes the following information.

Topic	See
Downloader purpose and function	page 7-2
Using Downloader	page 7-2
Downloader status and logs	page 7-2

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
7-1	Upgrading EtherLoop modem firmware	page 7-3
7-2	Upgrading from Generation 1 to Generation 2 modem firmware	page 7-6

Downloader purpose and function

The *Downloader* module is used to download firmware and FPGA (field programmable gate array) code for any number of Elastic system modems. These modems are selected by querying the modem database. The *Downloader* module examines the file header when told to download a certain file to the modem to verify the authenticity, type, and reliability of the file. Downloader monitors and displays the progress of a download and alerts the operator if any problems occurred during the download.

Using *Downloader*

EtherLoop modem firmware upgrades can use either FPGA (field programmable gate array) code or modem firmware. The overall process of upgrading EtherLoop modem firmware consists of uploading the new firmware to the YWS from a diskette or a location on a reachable network, and then downloading the firmware to the modems managed by the system YWS.

Procedure 7-1 on page 7-3 describes the steps required to upgrade the firmware and/or FPGA code on a YWS.

Downloader options

When using *Downloader*, you will select the following options:

- **Database.** This is the database where modem MAC addresses are stored. Currently, "System Inventory" is the only selection.
- **Modem(s) to which you will be downloading or uploading.** The available MAC addresses for the System Inventory Database include:
  - CO Modems: All of the CO/SE modems available in the currently selected database.
  - CPE Modems: All of the CPE/CE modems available in the currently selected database.

> ***CAUTION - Avoid firmware version conflicts***
> CO/SE and CPE/CE modems can be selected individually or in groups for the firmware upgrade. To avoid firmware version conflicts, **always** upgrade modem pairs (CO/CPE) simultaneously. This can be done automatically by selecting the option to "Auto-select all modems in the same Server/Client group" in the *Downloader* Main Menu.

- **Firmware/FPGA.** This is the file containing the firmware for each of these firmware types to download to the selected modems.
- **Shelf Devices**. Select any shelf devices provisioned.

Downloader status and logs

Downloader's View Last Status and View Logs functions in allow you to view the status of the last download or upload, or view the history log of all downloads performed.

Procedure 7-1
Upgrading EtherLoop modem firmware

Use this procedure to upgrade the EtherLoop modem firmware using the *Downloader* module.

Requirements

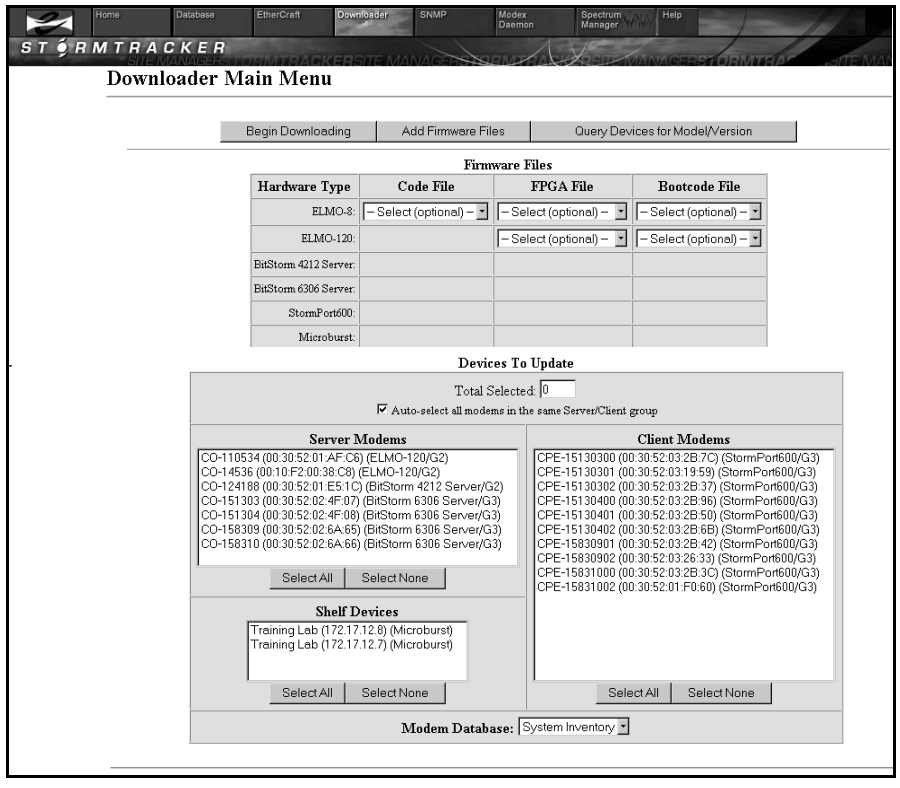
To do this procedure, you need the following:

- A file containing the new modem firmware and/or FPGA code on a 3.5-inch diskette, local workstation or reachable network location.

Action

Step	Action
1	From the YesWare Main Menu, choose *Downloader*. *The Downloader Main Menu appears as shown in Figure 7-1.*

Figure 7-1
***Downloader* Main Menu**

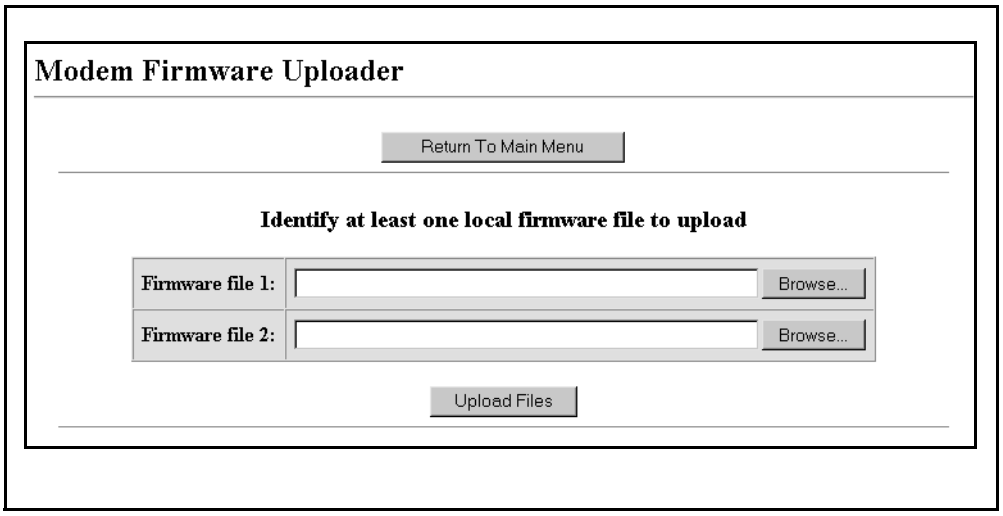


—continued—

Procedure 7-1 (continued)
Upgrading EtherLoop modem firmware

Step	Action
2	Click the "Upload New Files" button. *The Downloader / Modem Firmware Uploader appears as shown in Figure 7-2.*

Figure 7-2
***Downloader* / Modem Firmware Uploader**



3	Browse to the location of the file containing the new load for the modem firmware/FPGA code.
4	Click the "Upload Files" button. The system installs the new load into the YWS "downloader" directory.
5	When all files have been uploaded, click the "Return To Main Menu" button.
6	In the *Downloader* Main Menu, use the "Files To Download" pull-down menus and select the newly-uploaded **Firmware/FPGA** load(s).
7	In the "Modems To Update" section of the page, select the modem database and modems to receive the upgraded firmware/FPGA code.
8	Click the "Begin Downloading" button to begin upgrading the modems and modem database.

—continued—

Procedure 7-1 (continued)
Upgrading EtherLoop modem firmware

Step	Action
	When the download is complete, the system displays a **Download Status** page with the following information: • status of download (complete) • start and end times of download • file name of firmware code used in download • number of modems that receiving download • percent of file transfers completed (%) • percent of modem programming completed (%) • number of failed downloads • number of modem resets completed In addition, a second table on the **Download Status** page displays the following results for any failed downloads: • modem MAC address(es) • modem type (CO or CPE) • download type (Firmware/FPGA Code) • reason for download failure

You have completed this task.

Procedure 7-2
Upgrading from Generation 1 to Generation 2 modem firmware

Use this procedure to upgrade ELMo 8 and Elite EtherLoop modem firmware from Generation 1 to Generation 2.

Requirements

To do this procedure, you need the following:

- A file containing the Generation 2 modem firmware on a 3.5-inch diskette, local workstation or reachable network location. Generation 2 firmware fil names all begin with "02_". The firmware required for this procedure includes two files with the following file name format:
  - **02_xx_xx_boot.bin**
  - **02_xx_xx_e1.bin**

EtherLoop modem firmware files named **02_xx_xx_mp.bin** are **m**ulti**p**lexer firmware files and are upgraded using the standard firmware upgrade procedure described in Procedure 7-1 on page 7-3. There is no Gen. 1 multiplexer firmware.

Special procedure requirements

The following should be noted about this procedure:

- Gen-1 to Gen-2 firmware upgrades can take up to **15 minutes per modem pair**. Do not stop the procedure until the "complete" window appears as described in this procedure.
- The web browser of the PC performing the upgrade must be left with the *Downloader /* **Gen-1 to Gen-2 Upgrade Menu** as the active browser window. No other web browser windows should bel launched during the upgrade procedure.
- Always ensure the "Auto-select both modems of a Server/Client pair" box is checked and upgrade modem firmware in the assigned CO/CPE pairs.

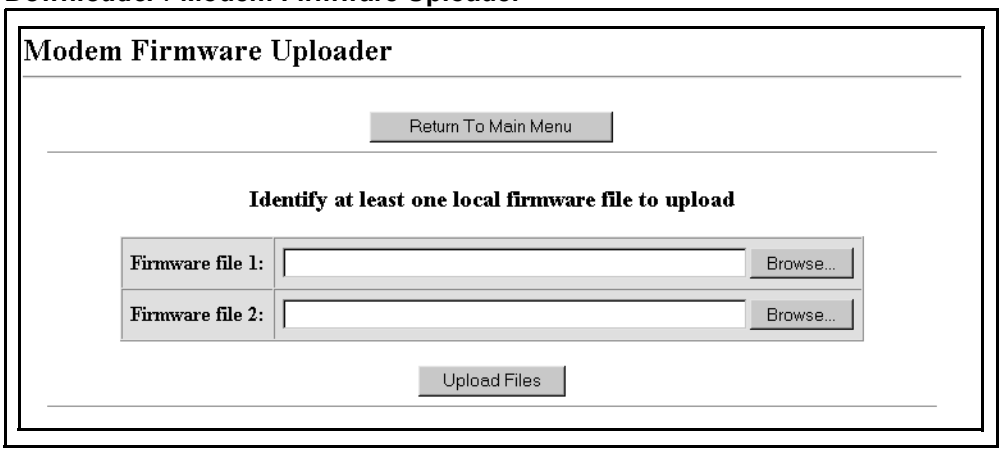
—continued—

Procedure 7-2 (continued)
Upgrading from Generation 1 to Generation 2 modem firmware

Action

Step	Action
1	From the Downloader main menu, click the "Upload New Files" button to launch the **Modem Firmware Uploader** dialog as shown in Figure 7-2.

Figure 7-3
***Downloader* / Modem Firmware Uploader**



2	Browse to the location of the file containing the new load for the modem firmware files.
3	Click the "Upload Files" button. The system installs the new load into the YWS "downloader" directory.
4	When all files have been uploaded, click the "Return To Main Menu" button.

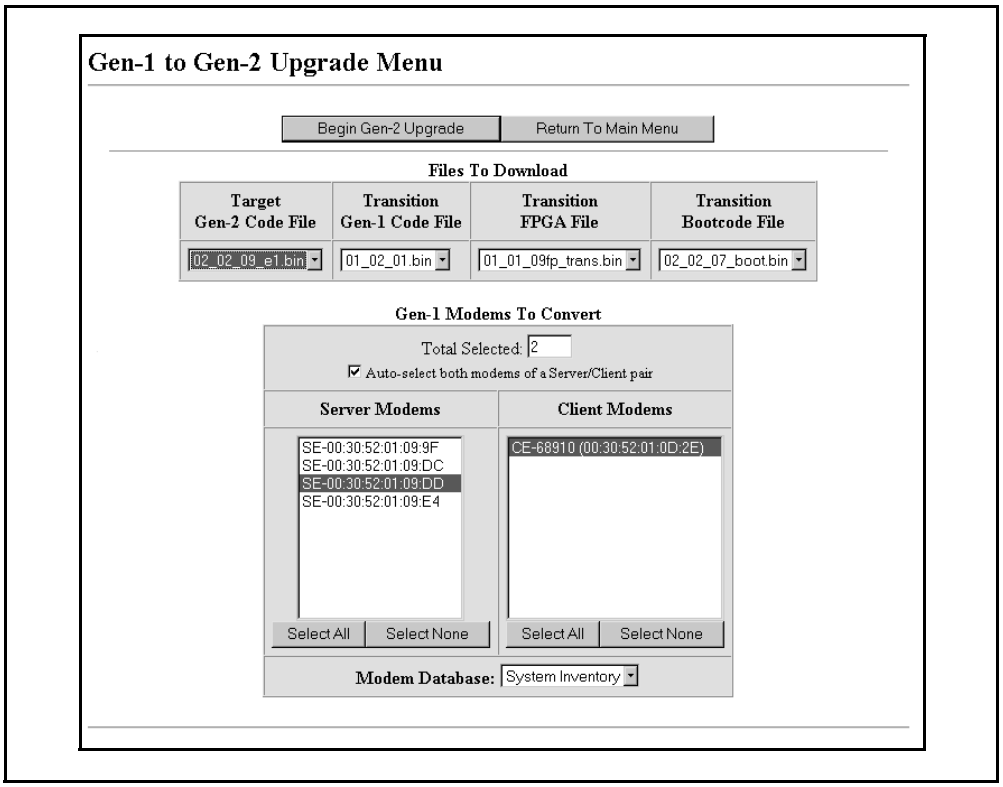
—continued—

Procedure 7-2 (continued)
Upgrading from Generation 1 to Generation 2 modem firmware

Step	Action

5 In the *Downloader* Main Menu, select "Gen-1 to Gen-2" upgrade to launch the **Gen-1 to Gen-2 Upgrade Menu**.See Figure 7-4.

Figure 7-4
Gen-1 to Gen-2 Upgrade Menu



6 Use the "Target Gen-2 Code File" pull-down menu and select the newly-uploaded Gen-2 firmware load. The remaining **Files To Download** ("Transition Gen-1 Code File," "Transition FPGA File," and "Transition Bootcode File") firmware loads are autofilled by the system.

7 In the "Gen-1 Modems To Convert" section of the page, select the modem database and modems to receive the upgraded firmware code.

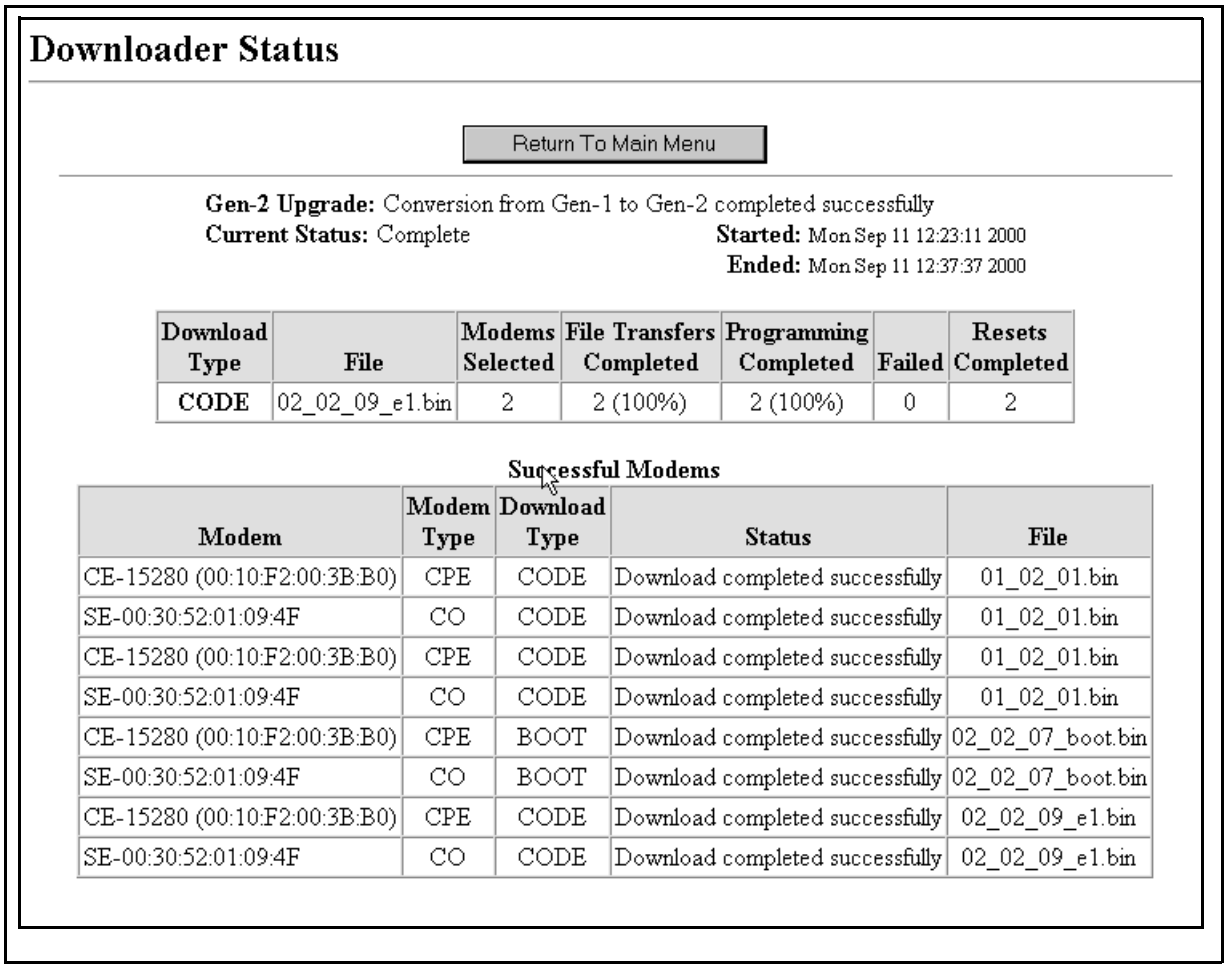
8 Click the "Begin Gen-2 Upgrade" button to begin upgrading the modems and modem database.

—continued—

Procedure 7-2 (continued)
Upgrading from Generation 1 to Generation 2 modem firmware

Step	Action
	When the Gen-2 upgrade is complete, the system displays a **Downloader Status** page as shown in Figure 7-5.

Figure 7-5
Firmware Gen-2 upgrade complete



Downloader Status

Return To Main Menu

Gen-2 Upgrade: Conversion from Gen-1 to Gen-2 completed successfully
Current Status: Complete **Started:** Mon Sep 11 12:23:11 2000
Ended: Mon Sep 11 12:37:37 2000

Download Type	File	Modems Selected	File Transfers Completed	Programming Completed	Failed	Resets Completed
CODE	02_02_09_e1.bin	2	2 (100%)	2 (100%)	0	2

Successful Modems

Modem	Modem Type	Download Type	Status	File
CE-15280 (00:10:F2:00:3B:B0)	CPE	CODE	Download completed successfully	01_02_01.bin
SE-00:30:52:01:09:4F	CO	CODE	Download completed successfully	01_02_01.bin
CE-15280 (00:10:F2:00:3B:B0)	CPE	CODE	Download completed successfully	01_02_01.bin
SE-00:30:52:01:09:4F	CO	CODE	Download completed successfully	01_02_01.bin
CE-15280 (00:10:F2:00:3B:B0)	CPE	BOOT	Download completed successfully	02_02_07_boot.bin
SE-00:30:52:01:09:4F	CO	BOOT	Download completed successfully	02_02_07_boot.bin
CE-15280 (00:10:F2:00:3B:B0)	CPE	CODE	Download completed successfully	02_02_09_e1.bin
SE-00:30:52:01:09:4F	CO	CODE	Download completed successfully	02_02_09_e1.bin

STOP

You have completed this task.

Elastic Networks

StormTracker-Site Manager and Administration

User Guide

Software Release 3.00

Publication Number: 08-01148-01-200
Document Revision 2.00

© 2001 Elastic Networks

All rights reserved

The information contained in this document is subject to change without notice. Elastic Networks reserves the right to make changes to equipment design or program components, as progress in engineering, manufacturing methods, or other circumstances may warrant.
EtherLoop is a trademark of Elastic Networks.

Publication Date: March 2001
Printed in the United States of America